

ORGANIZING INTELLIGENCE: DEVELOPMENT OF BEHAVIORAL SCIENCE AND THE RESEARCH BASED MODEL OF BUSINESS EDUCATION

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Conventional history of the predominant, research-based model of business education (RBM) traces its origins to programs initiated by the Ford Foundation after World War II. This paper maps the elite network responsible for developing behavioral science and the Ford Foundation agenda. Archival records of the actions taken by central nodes in the network permit identification of the original vision statement for the model. Analysis also permits tracking progress toward realizing that vision over several decades. Behavioral science was married to business education from the earliest stages of development. The RBM was a fundamental promise made by advocates for social science funding. Appraisals of the model and recommendations for reform must address its full history, not the partial, distorted view that is the conventional account. Implications of this more complete history for business education and for behavioral theory are considered. © 2009 Wiley Periodicals, Inc.

Schools of business have long employed behavioral scientists. This staffing practice reflects the predominant “research-based model of business education” (RBM) in the United States. In recent years this pattern of hiring appears to have increased significantly (Khurana, 2007; McGrath, 2007). Business school faculty members now include many leading economists, psychologists, sociologists, and statisticians. Basic disciplines of behavioral science such as social psychology are themselves shaped more and more by research conducted in schools of business. As this hiring has increased, these disciplines have come to play a more significant role in the education of business professionals.

In recent years, the practices of business education have come in for intense criticism from within and without. The bursting of the technology bubble earlier in the decade surfaced the questionable competence and even criminal misconduct of prominent business school graduates like Jeffrey Skilling and Andrew Fastow at Enron, Scott Sullivan at WorldCom, and Timothy Rigas at Adelphia Communications. Presumably the major role played by MBA graduates¹ in the investment banking collapse that precipitated the current recession will further increase scrutiny and criticism of these educational practices (Holland, 2009).

The critics have produced widely divergent recommendations to date, particularly with respect to the role of social science in business education. Some senior figures within the field

1. Richard Fuld, the CEO of Lehman Brothers, earned an MBA from New York University. Stanley O’Neill and John Thain, CEOs of Merrill Lynch, earned their MBA degrees from Harvard Business School. Vikrim Pandit, CEO of Citigroup, earned an MBA and a PhD in finance from Columbia. Of course, these examples represent merely the most high-profile, leading edge of the vast number of younger, lower-ranking MBA graduates who made operating decisions related to the subprime mortgage crisis. President George W. Bush, who presided during the crisis, also earned his MBA from Harvard Business School.

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of business education have urged a sharp break with the RBM (e.g., Bennis & O'Toole, 2005; Ghoshal, 2005; Mintzberg, 2004). In their view, the social science research produced at business schools is irrelevant to practice and has distracted business educators from what should be their primary responsibility. But other critics have argued that the RBM has simply not been implemented in a sufficiently rigorous manner. Some have urged a greater investment in implementation of the model in a purer form, with more emphasis on rational choice economics and less on current managerial practices (Cooley, 2005; DeAngelo, DeAngelo, & Zimmerman, 2005; Zimmerman, 2001). Pfeffer (Pfeffer & Fong, 2002) reached the very different conclusion that business schools have placed too much emphasis on rational choice in the RBM curriculum. He urged a rebalancing that would give a greater role to psychology and sociology.

While reaching very different conclusions about the changes needed, the critics have revealed a near universal agreement about the historical origins of the RBM. Yet this accepted history represents a misleading, heavily selected understanding of the actual course of events. This blind spot greatly complicates the task of accurately evaluating purpose, progress, accomplishments, failures, and digressions in the evolution of the RBM. It precludes any genuine understanding of how business education has affected social science and how social science has transformed the practice of business. Of course, the newer generation of behavioral scientists joining business schools will have much more superficial, if any, understanding of the history of the marriage between behavioral science and business education. The purpose of this paper is to begin to shrink this blind spot. Articulating an accurate history of the link between behavioral science and business education should provide a much better basis for weighing reforms in the latter. It should also provide an enhanced basis for understanding the implications for the behavioral science disciplines of having such strong ties with business schools.

The analysis begins by examining the early development of behavioral social science. It works forward in time to understand origins of the partnership with business education through the use of multiple sources of data and multiple modes of analysis. Rapid growth in the social sciences during the interwar period of the 1920s and '30s coincided with the birth of numerous institutions for policy analysis and formulation. These agencies were part of what Lippmann (1922) called "organized intelligence" (see also Fisher, 1999; Merriam, 1944) but many today refer to as "think tanks" (Rich, 2005). Examining the interlocking ties between these different organizations will help to identify the central individuals responsible for the great expansion of social science. But measures of network centrality indicate only potential for influence. Archival research into the beliefs and actions of the central members in the network was also undertaken. The purpose was to determine specific influence tactics they exercised during the drive to promote expansion of social science. This part of the investigation identified a strong coalition of academics, professionals, business leaders, and government officials who exerted considerable effort toward the establishment of behavioral science and business education.

It is worth pointing out that other scholars have already partially mapped different branches in this emergent network. But their analysis has been much more limited in design and scope. For the most part, their network analysis has been informal. Baritz (1960) and Meyer (2007), for instance, identified those responsible for the origins and growth of the field of industrial-organizational psychology. Scott (1992) and O'Connor (1999) informally traced development of the interdisciplinary "Pareto Circle" at Harvard. They also described the role this sub-network played in building the research arm of the Harvard Business School, and the Human Relations paradigm of research.

Djelic (2004) informally traced out the trans-Atlantic network responsible for diffusing the "American Model" of management to Europe under the guise of the Marshall Plan. As she

pointed out, this sub-network also initiated what has proven to be the very successful export of the RBM to Western Europe. Tiratsoo (2000) studied the trans-Pacific programs that exported the model to Japan.

In two cases, research has modeled important sub-networks using formal network analysis. Freeman (2004) mapped the ties between researchers responsible for the development of social network analysis. That group intersects the Pareto Circle and Harvard Business School. Heaney and Hansen (2006) formally modeled the sub-network comprising the so-called “Chicago School” of political science.

Neither formal nor informal studies to date have connected these disparate sub-networks nor examined their relation to the propagation of RBM or professional education in other fields. The formal analysis here reveals the linkage between these various sub-networks, their common genealogy and origin. This analysis indicates the vast scope and far-reaching influence of a central coalition of actors on behavioral science, business education, and policy. This coalition shared the goal of constructing tools for effective social engineering.

The formal network analysis reported here reveals very significant links between these various enterprises. Measures of individual centrality in the larger social science–policy network that was mapped identifies influential actors in this elite coalition of academics, business, and government. In the interest of brevity, the paper focuses on the ideas and actions taken by just three members: Walter Lippmann, Charles Merriam, and Beardsley Rumml. At the risk of obscuring the coalition or network nature of the effects, this focus does yield the identification of the original vision statement for both behavioral science and business education. The two have been wedded from the very beginning. Before proceeding with this analysis, the paper begins with a brief review of the misleading, conventional history of the RBM.

THE SELECTIVE HISTORY OF THE RESEARCH BASED MODEL

Histories of business education focus exclusively on events that took place after World War II. Histories of behavioral science and administrative science generally do the same. They are all, as Augier, March, and Sullivan (2005, p. 85) deemed it, “truncated by the decisive reality of 1945.” The RBM is always traced back to work sponsored by the Ford Foundation in the 1950’s (Bennis & O’Toole, 2005; Cooley, 2005; Ghoshal, 2005; Jeuck, 1986; Leavitt, 1989; Mintzberg, 2004; Porter & McKibbin, 1988). Zimmerman’s (2001, p. 2) account is fairly representative: “[D]uring the Korean War, the Ford Foundation became interested in enhancing American management via improved professional education as a means to stem communism.”

The lengthy report *Higher Education for Business*, commissioned by the Ford Foundation and authored by two professors of economics, Robert Gordon and James Howell (1959), is invariably cited as having provide the blueprint for the RBM. Some writers do acknowledge the additional contribution made by *The Education of American Businessmen*, a study commissioned simultaneously by the Carnegie Foundation and edited by Frank Pierson, a professor of economics at Swarthmore. According to Pfeffer and Fong (2002),

The Gordon and Howell report and funding from the Ford Foundation and the Carnegie Council (Pierson, 1959) started business schools on their continuing trajectory to achieve academic respectability and legitimacy on their campuses by becoming social science departments, or perhaps, applied social science departments.

The three economists (Gordon, Howell, and Pierson) all referred to the primitive state of business education as it was then practiced at most campuses. They urged adoption of a

different model, one grounded in behavioral social science. In his contribution to the Carnegie report, the founding dean of Carnegie's Graduate School of Industrial Administration, Leland Bach (Pierson, 1959, p. 326) expressed the basic problem: "Little is accomplished in management except with and through people. . . . Often human behavior poses the most difficult aspects of managerial problems." But he also proposed a solution:

There is a big job ahead in cooperation between business schools and faculty to re-forged many of the tools of behavioral science and to build new ones to the high level needed as the years go by.

Fortunately, the authors of both reports were able to locate two existing "centers of excellence"—at Bach's Carnegie School and at Harvard Business School. Though each school relied on a different approach, Gordon, Howell, and Pierson deemed their programs to be fundamentally sound. Their practices needed to be nurtured further and emulated by others. Following publication of the reports, Ford provided still more funds to enable other universities to learn how these centers of excellence operated. They underwrote the efforts of faculty across the country to adopt these practices (Schlossman, Sedlak & Wechsler, 1987).

Zimmerman's account of this history goes one step further than most others by specifically pinpointing the political motive of anticommunism for the Ford Foundation's interest in business education. The controversial nature of some of that particular Foundation's other anticommunist initiatives (Bell, 1971; Bird, 1999; Domhoff, 2002; Fisher, 1999; Micklethwait & Wooldridge, 2004; Parmar, 1999; Saunders, 2000) alone justifies further study of the origins and motivation for its interest in wedding business education to behavioral science.

But Schlossman, Sedlak, and Wechsler's (1987) history of the Foundation's program on business education clarifies the true timeline and diffusion process. Ford had funded business education programs for a decade before the Gordon and Howell report appeared. A draft agenda for the foundation from 1947, prepared by a committee chaired by Rand Corporation director Rowan Gaither, urged Ford administrators to invest in "social engineering" that would apply behavioral science to business education (Schlossman, Sedlak, & Wechsler, 1987). Former auto executive Paul Hoffman and former University of Chicago President Robert Maynard Hutchins were the leadership team chosen by the foundation in 1950 to implement the Gaither agenda. From his experience in leading the Marshall Plan reconstruction in postwar Europe, Hoffman had already formed strong beliefs about the role business and business education must play in combating Soviet expansion. This was essentially a contest "between the American assembly line and the Communist party line" (Hoffman, 1951, p. 46).

During that same time frame, obvious interlocks between the Ford Foundation and other active philanthropies attracted congressional investigations. The Reece Committee, which conducted one of these probes,

described the "network or cartel" in the social sciences as having five components. The first is a group of foundations, composed of the various Rockefeller and Carnegie foundations, the Ford Foundation (referred to as a "late comer but already partially integrated"), the Commonwealth Fund, The Maurice and Laura Falk Foundation, The Russell Sage Foundation, and others." (Wormser, 1958, p. 63)

The committee majority deemed the financial resources controlled by these interlocking directorates as a dangerous "concentration of power" (Wormser, 1958, p. 61). Ironically enough, many legislators were concerned that the Ford Foundation was part of a network advancing, not impeding, the communist agenda.

Among the oldest of the philanthropies in this network, the several Rockefeller foundations had established behavioral science during the 1920s and 1930s (Bulmer & Bulmer, 1981; Fisher, 1999). Developing the tools for social engineering had been a primary goal. Appraising the source of the Ford Foundation's interest in marrying social science to business education may then be facilitated by working forward from this early period of expansion. Rockefeller activity occurred during the interwar period following World War I. But the war itself was the epicenter.

THE BIG BANG OF AMERICAN SOCIAL SCIENCE

Today social scientists routinely occupy top-ranking positions in the executive branch of the federal government. Prior to the election of Woodrow Wilson as president, they played no real role at all in the formulation of policy. Before leaving for government service, the then Princeton professor of politics had called for the development of administrative science as a distinct branch of political study.

There should be a science of administration which shall seek to strengthen the paths of government, to make its business less un-businesslike, to strengthen and purify its organization, and to crown its duties with dutifulness. (Wilson, 1887, p. 201)

When President Wilson chose to commit American forces to the cause of winning the war in Europe for the Allied powers, he also mobilized social scientists to administer the war effort effectively and efficiently. Though Dahl (1961) attributed the development of behavioral science to World War II, when academics "were forced out of the ivy tower," Table 1 shows quite clearly that he had identified the wrong war.

By executive order, Wilson established the National Research Council (NRC) (National Research Council, 1919) to "promote research in the mathematical, physical, and biological sciences, and in the application of these sciences to engineering, agriculture, medicine, and other useful arts, with the object of strengthening the national defense, and of contributing in other ways to the public welfare." Wilson's council consisted of 13 divisions, including a Division of Anthropology and Psychology.

Anthropologists conducting fieldwork provided on-the-ground intelligence to a government that lacked a standing intelligence service or trained agents (Boas, 1919; Price, 1999). The psychological branch of NRC organized human factors studies, training programs, and the first large-scale application of psychological tests to the task of making personnel decisions (see Baritz, 1960; Highhouse, 2002; Ruml, 1919; Yerkes, 1919). Social scientists actively participated in each of the organizations shown in Table 1.

They produced a mixed record during wartime. Though its contribution to military effectiveness was unclear, the Army's testing program demonstrated the potential utility of psychometric instruments applied to personnel decisions. The method showed enough promise to generate many more government and business applications in the years that followed (Baritz, 1960; Highhouse, 2002; Ruml, 1919; Yerkes, 1919). Veterans of the program, including James Cattell, Walter Dill Scott, and Walter Bingham, established consulting firms that commercialized testing practices.

The Committee for Public Information (CPI) mounted a frighteningly successful attitude change project that turned American public opinion toward enthusiastic support of the war. "Administration activities must be dramatized and staged, and every energy exerted to arouse ardour and enthusiasm. Recruiting can be stimulated and public confidence gained" (Creel to Wilson, April 11, 1917; reprinted in Link, 1984, p. 39). This was a complicated task since Wilson had just won reelection on a neutrality platform, on the slogan

TABLE 1. Agencies created during World War I to prosecute the war effectively and efficiently.

Agency	Acronym	Founded	Mission
War Industries Board ^a	WIB	1917	Analyzed industrial requirements of the United States and Allied nations.
War Trade Board ^a	WTB	1917	Controlled imports and exports; conserved commodities and shipping; arranged price fixing.
Committee for Public Information ^b	CPI	1917	Released government news during World War I. Sustained morale. Administered voluntary press censorship.
The Inquiry ^c	Inq	1917	Distinguished scholars tasked to brief the president about the pending postwar settlement.
American Commission to Negotiate the Peace ^d	ACNP	1918	U.S. delegates and staff at the Paris Peace Conference.
Central Bureau of Planning and Statistics ^a	CPBS	1917	Prepared surveys for the president, operated a statistical clearinghouse, and provided economic data.
NRC: Division of Psychology ^e	NRC-P	1917	To deal with various aspects of the relations of psychology to the war.
British Peace Conference Delegation ^f	BPCD	1918	British delegates and staff at the Paris Peace Conference.

^a The Papers of Edwin F. Gay, Hoover Institute for War, Peace, and Revolution.

^b Creel (1920), Mock and Larson (1939).

^c Gelfand (1963).

^d Papers of Thomas W. Lamont, Baker Library, Harvard Business School.

^e Yerkes (1919).

^f The Foreign and Commonwealth Office.

“he kept us out of the war” (Creel, 1920; Lasswell, 1927; Merriam, 1919). The sophisticated multimedia campaign waged by the CPI, which chairman Creel (1920) called “spreading the gospel of Americanism,” incorporated literature, pamphlets, visual art, songs, and coordinated local speakers addressing timely subjects. The work of the CPI attracted praise even from a member of the defeated German enemy who was himself quite a skilled propagandist:

[T]he war propaganda of the English and Americans was psychologically sound. . . . There, propaganda was regarded as a weapon of the first order, while in our country it was the last resort of unemployed politicians and a comfortable haven for slackers. (Hitler, 1943)

The practices of the CPI continue to be studied carefully by wartime administrations, most recently by the Bush administration in the run-up to the declaration of war on Iraq (DeGrazia, 2002).

The Inquiry was designed to surreptitiously prepare for the postwar negotiations. Its work helped with the generation of propaganda. The product of Inquiry research, Wilson’s eloquent and idealistic statement of American war aims, the “Fourteen Points,” was among the most potent weapons of persuasion (Gelfand, 1963; Nicolson, 1933; Noble, 1935). The universal appeal of these principles undermined the willingness of German citizens to continue a seemingly futile war (Klein, 1998; Luckau, 1941; Mommsen, 1998). The idealism of a call for open diplomacy, a global association of nations, and national self-determination (“peoples and provinces are not to be bartered about from sovereignty to sovereignty as if they were mere chattels and pawns in a game, even the great game, now forever discredited, of the balance of power”; Address to a Joint Session of Congress, February 11, 1918; reprinted in Link, 1984, pp. 322–323) also inspired nationalist movements in the Middle East and Southeast Asia.

But if the CPI was a striking success, the American Commission to Negotiate the Peace (ACNP) was an even greater failure. Before the treaty with Germany was completed, many in the American delegation were convinced that the document they were negotiating was “thoroughly dangerous to the interests of the United States” (see Berle to Grew, May 15, 1919; reprinted in Berle, 1973, p. 13). Nor was this only the American perspective. Resignations from the British delegation included John Maynard Keynes, who served as an advisor on the financial considerations including German reparations payments to the Allies:

I can do no more good here. I've gone on hoping even through these last dreadful weeks that you'd find some way to make of the treaty a just and expedient document. But now it's apparently too late. The battle is lost. (Keynes to Lloyd George, June 5, 1919; reprinted in Johnson, 1977, p. 469).

Before the peace conference ended, prominent members of the American and British delegations met at the Hotel Majestic in Paris to plan ongoing collaboration in the form of a joint “Anglo-American Institute” (Dockrill, 1980; Parmar, 2004). They sought to correct mistakes made in negotiating the treaties by developing an enduring mechanism for policy analysis and formulation. In the process they created a new and influential organizational form, the social science think tank (Rich, 2005). The loosely coupled organizations that actually emerged, the Royal Institute for International Affairs in London (RIIA; aka Chatham House) and the Council on Foreign Relations (CFR) in New York were and are dedicated to collaborative study of international relations by leaders of business, politics, and academia. An early RIIA leader summarized their intentions during the meeting held at the Hotel Majestic just before the Treaty with Germany was signed:

In Paris, a number of men, partly permanent officials and partly specialists attached to the delegations had been brought into close contact. . . . When the Conference closed they would constitute the most valuable factor in the production of sound public opinion. But their value would deteriorate unless steps were taken to keep them abreast of the facts and to enable them to think out the issues by discussion with each other. (Remarks of Lionel Curtis, from minutes of a meeting at the Hotel Majestic, Foreign Office Archives document 608/152)

The new organizational form spread quickly (see Table 2). Think tanks like the Hoover Institution and the Brookings Institution continue to influence social science and public policy in profound ways. They have also spawned numerous imitators (Micklethwait and Wooldridge, 2004). As the congressional investigators later observed with alarm, the founding membership, officer structures, and board composition of these many organizations interlocked. Those ties extended back from participation in Wilson's wartime agencies. Joint membership provides an opportunity to formally map the network behind the development of behavioral science.

Joint participation in events not only provides the opportunity for actors to interact, but also increases the probability that pairwise ties (such as acquaintanceship) will develop between actors. . . . Overlap in group membership allows for the flow of information between groups, and perhaps coordination of the groups' actions. (Wasserman & Faust, 1994, p. 293)

A NETWORK ANALYSIS

Connections between three types of organizations were studied. Given the complexity of the task, analysis was mostly restricted to American organizations. All the organizations from

TABLE 2. "Organized intelligence": Social science think tanks founded during the interwar decades.

Think Tank	Acronym	Founded	Mission
Council on Foreign Relations ^a	CFR	1931	To afford a continuous conference on international questions affecting the United States.
Royal Institute for International Affairs ^b	RIIA	1920	Help individuals and organizations to be at the forefront of developments in an increasingly complex world.
Hoover Institution ^c	HI	1919	Seeks to secure and safeguard peace, improve the human condition, and limit government intrusion.
Brookings Institution ^d	BI	1927	Dedicated to independent research and innovative policy solutions.
National Bureau of Economic Research ^e	NBER	1920	For exact and impartial determinations of facts bearing on economic, social, and industrial problems.
Social Science Research Council ^f	SSRC	1923	Leads innovation, builds interdisciplinary and international networks, and focuses research on important public issues.
Institute for Pacific Relations ^g	IPR	1925	Study of the social, economic and political relations of the peoples of the Pacific area.
Cowles Commission ^h	CC	1931	Conduct and encouragement of research in economics and related fields.
Society for the Psychological Study of Social Issues ⁱ	SPSSI	1936	Bring theory and practice into focus on human problems of group, community, and nations.

^a Archives of the Council on Foreign Relations, Seeley G. Mudd Manuscript Library, Princeton University.

^b Chatham House Archives, London.

^c Archives of the Hoover Institution for War, Peace, and Revolution, Stanford University.

^d Smith (1991).

^e Mitchell (1927).

^f Rockefeller Foundation Archives, Pocantico, New York.

^g Akami (2002).

^h Cowles.org.

ⁱ Krech and Cartwright (1956).

Tables 1 and 2 were included. Table 3 contains another set, which included commercial or governmental bodies formed during the interwar decades that actively applied emerging social and administrative science to policy making.

This set includes two committees, "Dawes" and "Young," appointed during financial crises to renegotiate the reparations section of the Treaty of Versailles. Commerce Secretary Herbert Hoover appointed a group of academics and business leaders to study business cycles and unemployment in 1921. President Hoover commissioned a broad mix of social scientists to analyze *Recent Social Trends* in 1928 (President's Research Committee on Social Trends, 1933). Candidate Franklin Roosevelt created a "Brains Trust" that planned his campaign for the presidency (Berle, 1973). He also established a National Resource Planning Board that facilitated the formulation of New Deal economic and social reforms during his first term in office (Collins, 1978). Later in the decade he appointed the Presidential Committee on Administrative Management (1937) to study the administrative organization of the White House. The committee's proposed organizational structure, the Office of the President, was formally adopted in 1938.

Three other social entities were included in the analysis of interlocks. To formally assess linkage between the Council on Foreign Relations in New York and the Royal Institute for International Affairs in London, the peace conference delegates who attended the formal planning meeting at the Hotel Majestic were included (Dockrill, 1980). Also included were the board members of the Rockefeller Foundation during the interwar period. Rockefeller ties were mapped because the various family foundations provided a conduit for much-needed

TABLE 3. Commerical and governmental applications of social science during the interwar decades.

Organization	Acronym	Founded	Mission
The Scott Company ^a	SC	1919	Consultation with respect to labor policy, the practices and procedure of labor management, and the technique of personnel control.
The Psychological Corporation ^b	PC	1921	The advancement of psychology and the promotion of useful applications of psychology.
President's Committee on Recent Economic Changes ^c	PCBC	1921	Examine the causes and effects of the business cycle.
Committee of Experts ^d	DC	1923	Stabilize the German currency and banking system and to restart reparations transfers.
President's Committee to Study Recent Social Trends ^e	PCST	1929	Compiled data on myriad aspects of social life in the United States at the request of President Hoover.
The Young Committee ^f	YC	1929	To establish final German reparations obligations to the Allied nations.
The Brains Trust ^g	FDR-BT	1932	Scholarly advisors to Franklin Roosevelt's 1932 presidential campaign.
The National Resource Planning Board ^e	NRPB	1934	Coordinate federal planning related to conservation and use of national resources.
President's Committee on Administrative Management ^e	PCAM	1937	To modernize the White House business and management organization.
War and Peace Studies Project ^h	WPS	1939	To coordinate with State Dept. on analysis of the effects of war and the preparation for the postwar international settlement.

^a Papers of Beardsley Ruml, Special Collections, University of Chicago.

^b Baritz (1960).

^c Papers of Herbert Hoover, Hoover Presidential Library, West Branch, IA.

^d Committee of Experts (1924).

^e Papers of Charles E. Merriam, Special Collections, University of Chicago.

^f Schuker (1988).

^g Berle (1973).

^h Archives of the Council on Foreign Relations, Seeley G. Mudd Manuscript Library, Princeton University.

financial support to such diverse activities as the Social Science Research Council, the National Bureau of Economic Research, and the War and Peace Studies project.

Two years before the attack on Pearl Harbor, this project (WPS) brought together elite academic, government, and business leaders to work with the U.S. State Department. The goal of the five WPS study groups (economic matters, financial matters, territorial questions, world political organization, and armaments limitation) was to convene business, academic, and government experts to aid in planning during the "present emergency" ("Proposed activities of the Council on Foreign Relations in the field of research and collaboration with the Department of State," Memorandum of Conversation, September 12, 1939, Series 3, Records of the Council on Foreign Relations, Princeton University). In many respects WPS represented an attempt to initiate the type of analysis completed by the Inquiry only before the United States was actively involved in this new and larger war.

The Affiliation Matrix

An affiliation matrix **A** was constructed to map associations between the **g** individual actors and the **h** wartime and postwar organizations that built and applied social science (see Table 1). The (**i**, **j**)th cell in the **g** × **h** matrix is equal to 1 if actor **i** was affiliated with

organization **j** and 0 if **i** was not affiliated with **j**. This two-mode matrix of 1697 actors and 28 organizations was transformed into two new symmetric, one-mode matrices using the program Ucinet (Borgatti, Everett, & Freeman, 2002). The matrix **B** was a one-mode matrix, 1697 × 1697, of shared associations between pairs of individuals counting the total number of organizational associations they shared out of **h**. The **h** × **h** matrix **C** reflects the total number of individual actors in the set **g** shared by pairs of organizations.

Multiple measures of centrality were computed for each individual to better understand which persons had the greatest opportunity for communication and influence through these channels. Measures of degree centrality reflect the number of direct ties an actor has to others in the network. Closeness centrality takes indirect ties into account (e.g., when one individual can connect to another through a third party), and reflects how few intermediaries lie between an individual and the others in the network. Those who can reach others through fewer intermediaries have greater closeness centrality. Betweenness centrality reflects intermediate positions between other actors in a network; an individual who lies on the path from one person to another is in a position to control the flow of information and resources between them (Wasserman & Faust, 1994). The 25 most central individuals as ranked by betweenness are listed in Table 4.

Figure 1 depicts relationships among organizations (the **h** × **h** matrix **C**), where line width represents the number of individuals sharing membership in both. In the middle of this web is a triangle connecting three highly interlocked think tanks—the Council on Foreign Relations, the Social Science Research Council, and the Brookings Institution. A fourth, the

TABLE 4. Measures of centrality for individuals in the selected interwar institutions; only the 20 actors with the highest index of betweenness centrality are shown.

Last	First	Position	Birth	Death	Centrality Index		
					Degree	Betweenness	
1	Gay	Edwin	Dean, Harvard Business School	1867	1946	61.21	16.46
2	Wilson	Woodrow	President of the United States	1856	1924	46.03	9.89
3	Roosevelt	Franklin D.	President of the United States	1882	1945	40.20	6.37
4	Young	Owen	Chairman, General Electric	1874	1962	30.72	5.93
5	Mitchell	Wesley C.	Professor, Columbia	1874	1948	28.37	4.01
6	Merriam	Charles E.	Professor, Chicago	1874	1953	40.96	3.49
7	Shotwell	James T.	Professor, Columbia	1874	1965	37.55	3.29
8	Ruml	Beadsley	Director, Spelman Memorial	1894	1960	34.14	3.22
9	Bowman	Isaiah	Director, Am. Geographic Society	1878	1950	38.55	2.90
10	Dennison	Henry	President, Dennison Manufacturing	1877	1952	33.37	2.53
11	Ford	Guy S.	Professor, Minnesota	1873	1962	37.49	2.51
12	Coolidge	Archibald C.	Professor, Harvard	1866	1928	33.61	1.92
13	Dulles	John F.	Partner, Sullivan Cromwell	1888	1959	32.67	1.67
14	Leith	Charles K.	Professor, Wisconsin	1875	1956	22.72	1.64
15	Lamont	Thomas W.	Partner, J. P. Morgan & Co.	1870	1948	26.31	1.49
16	Frank	Lawrence	Economist, Spelman Memorial	1890	1968	30.61	1.23
17	Dillon	Clarence	Financier	1882	1979	22.54	1.21
18	McCormick	Vance	Journalist, Politician	1872	1946	31.25	1.17
19	Baruch	Bernard	Financier	1870	1965	21.37	1.12
20	Lippmann	Walter	Journalist	1889	1974	33.96	1.08
21	Root	Elihu	Secretary of State	1845	1937	24.66	0.97
22	Coss	John J.	Professor, Columbia	1884	1940	21.95	0.92
23	Bettman	Alfred	Corporate Attorney	1873	1945	28.37	0.85
24	Fosdick	Raymond	Corporate Attorney ^a	1883	1972	25.07	0.79
25	Berle	Adolf	Professor, Columbia Law School	1875	1971	21.95	0.78

^a Fosdick worked closely with the Rockefeller family's philanthropies. He was also appointed to the League of Nations as a deputy undersecretary until the United States Senate rejected membership in the organization.

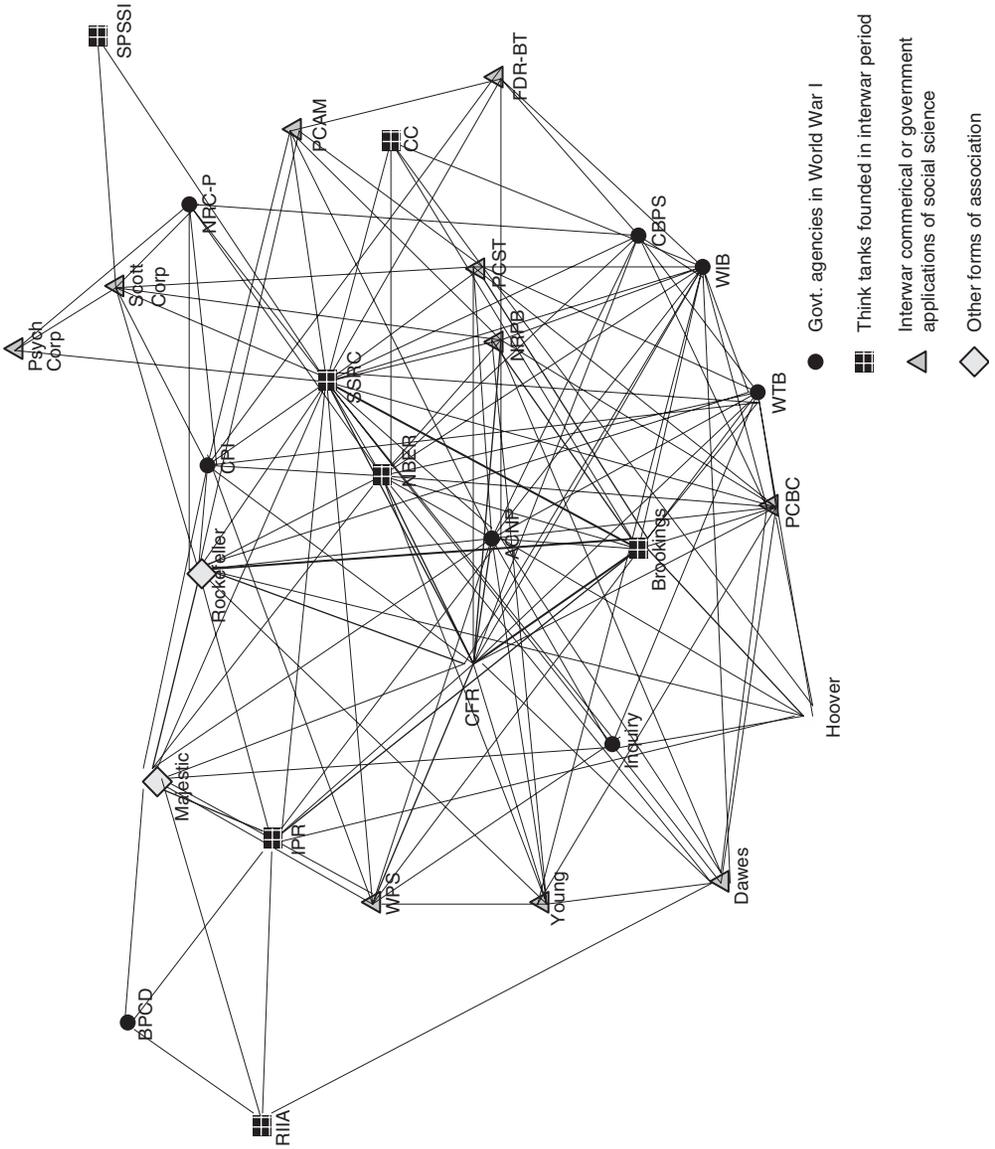


FIGURE 1. Spatial representation of the ties between selected institutions founded between 1917 and 1939.

National Bureau of Economic Research, lies on the line segment connecting the CFR and the SSRC. All four organizations connect backward to the World War I-era government agencies, depicted as filled circles, and forward to interwar commercial and government applications like the Scott Company and the Presidential Committee on Administrative Management (PCAM), depicted as filled triangles.

The central actors in this network were a diverse mix of politicians, professionals, and business leaders, including Owen Young of General Electric (and “the Young Committee” on reparations) and Thomas W. Lamont from J. P. Morgan and Company. Several figures from the academic world occupied very central positions. Edwin Gay, a political economist, was founding dean of the Harvard Business School and originator of its case method of instruction (Copeland, 1958; Heaton, 1952; Khurana, 2007). But several others had significant connections to Harvard Business School. Lamont taught corporate finance while chairing the school’s advisory board. He turned down Gay’s entreaties to become a full-time faculty member, but personally brokered the endowment of its first chaired professorship (Copeland, 1958). Adolf Berle taught corporate law at HBS during the 1920s before taking a position with the Columbia Law School. Owen Young was a close personal friend of Gay’s successor as the school’s dean, Wallace Donham (1952). Named an honorary alumnus in 1924, he gave the formal address dedicating the new HBS facility (Young, 1927).

The several connections of this elite network to Harvard Business School provide *prima facie* evidence that the enterprise of business education was connected to behavioral science long before the Ford Foundation was established. But ties reflect only potential communication and influence. Assessing whether and how they utilized their position to wield influence requires a study of actions and collaborations.

Archival Research on the Network

To understand the beliefs and actions of the central players I searched records contained in published sources and private collections. This included memoirs and biographical references of many central players (from Table 2 and some ranked just below the level of 20), including Woodrow Wilson (Auchincloss, 2000; George & George, 1964; Link, 1984), Franklin Roosevelt (Schlesinger, 1958), Edwin Gay (Heaton, 1952), Thomas Lamont (Chernow, 1990; Lamont, 1950), Charles E. Merriam (Karl, 1974; Simon, 1985b), Walter Lippmann (Steel, 1999; Blum, 1985), Adolf Berle (Berle, 1969, 1973), and Owen Young (Case & Case, 1982).

Non-published sources that were consulted included the archives of the Council on Foreign Relations, Chatham House, the Rockefeller Foundation, the Foreign and Commonwealth Office, the Hoover Institution, and the Hoover Presidential Library. Library collections provided access to the personal papers of Lamont, John Foster Dulles, Allen W. Dulles, Charles Merriam, Beardsley Ruml, and Walter Lippmann.

THREE KEY NODES IN THE BEHAVIORAL SCIENCE NETWORK

This section addresses the actual collaborations between central players. In the interest of space, a selected account is provided, one that emphasizes emerging ties between behavioral science and business education. This account simplifies by focusing on the actions of three individuals. These three should be understood as nodes in a complex network and in an evolving coalition. Their ideas and actions can only really be understood through the connections with other actors.

The contentious campaign waged by the Wilson administration and other members of the ACNP (particularly Dulles, Hoover, and Lamont) to persuade the Senate to ratify the peace treaty

extended and deepened collaboration among these core network members. Their profound failure complicated the task of implementing the treaty's open-ended provisions—provisions which included a financial section stipulating Germany pay an indefinite sum for reparations (Bottom, 2003). Early CFR activity focused on this set of problems. In 1922, the organization devised a practice they called “the study group method”² for conducting ongoing research about important subjects. Study group members and RIIA counterparts soon began publishing accounts of wartime activities and the peace conference, doubtless influenced by think tank deliberations (House & Seymour, 1921; Keynes, 1920; Lansing, 1921; Nicolson, 1933).

Walter Lippmann's Influence

Lippmann occupied a unique bridging position. As advisor to Wilson, he had advocated creation of the CPI, later serving as a propaganda agent in London. Before taking that assignment he was administrator and recruiter for “the Inquiry,” personally shaping the drafting and interpretation of the Fourteen Points (see Memorandum from Lippmann to Edward M. House, October 28, 1918; reprinted in Blum, 1985, pp. 97–105). Skilled at networking, he forged life-long friendships with international delegates such as Keynes at the peace conference and became an active participant at the CFR (Steel, 1999). His ambitious social theory (Lippmann, 1922) sought to explain both the CPI's propaganda success and the negotiating mistakes made in Paris. Providing a foundation for social psychology and behavioral science (Katz & Schank, 1938; Katz & Kahn, 1966; Simon, 1985a), it was based on personal observations, observations of colleagues, and work by his teachers in psychology and political science.³

Lippmann emphasized the limited capacity of citizens to process information, form judgments, and reach decisions. Solving complex problems about an actual environment requires us to construct “pseudo-environments.” These are mental models we can manipulate to reason about possible consequences of different courses of action. Using a term that had referred to a primitive printing process, Lippmann noted that “stereotypes” (“pictures in our heads”) form the building blocks for these models. His initial example of a stereotype explained the obstacle to successful resolution of the Paris negotiations.⁴

Could anyone have penetrated the mind of M. Clemenceau, would he have found there images of the Europe of 1919, or a great sediment of stereotyped ideas accumulated and hardened in a long and pugnacious existence? Did he see the Germans of 1919, or the German type as he had learned to see it since 1871? He saw the type, and among the reports that came to him from Germany, he took to heart those reports . . . which fitted the type.

“Blind spots” in mental models built from these stereotypes provide an opportunity for leaders. By carefully censoring the information they reveal to the public, leaders shape others' mental models to “manufacture consent” for their policy. Working for the CPI, Lippmann had exploited such blind spots to convince Germans to quit the war effort. But his first example emphasized that leaders must also rely on mental models to make policy and negotiate settlements. Blind spots in their models lead to mistakes with tragic consequences.

2. The three initial study groups examined “Post-War Economic and Financial Problems” (Thomas Lamont, Wesley Mitchell, and John Foster Dulles were among the 10 members), “Problems in Central Europe and the Mohammedan World” (chaired by Isaiah Bowman), and “International Organization” (Whitney Shepardson, Edwin Gay, Walter Lippmann, and Learned Hand were among the members) (Archives of the Council on Foreign Relations, Box 38, Records of Study Groups).

3. As an undergraduate at Harvard, Lippmann studied psychology with William James and political science with Graham Wallas. *Public Opinion* clearly reveals the influence of the former's *Principles of Psychology* and the latter's *Human Nature and Politics*.

4. Bottom (2003) showed that this passage, though paraphrased, did not cite Keynes's polemic “The Economic Consequences of the Peace.” Given their friendship and the aid Lippmann had previously rendered to Keynes in publishing and promoting his book, the similarity cannot be coincidental.

Social psychologists soon tested and, to their own satisfaction, “confirmed Lippmann’s contention about the nature and extent of stereotypes” (Katz & Schanck, 1938, p. 79). His explanation for their failure also rang true with CFR colleagues who had negotiated at the peace conference. According to reparations expert John Foster Dulles:

The participants suffered from blind spots. The most serious of these was the so-called “war guilt clause.” . . . It is easy . . . to draw the conclusion that those who then played important parts on the world’s stage were blind and stupid. Such a conclusion is warranted, but it is unimportant. What is important is to find the reasons for this blindness and stupidity which are now apparent. This, I think, cannot be adequately explained in terms merely of individual deficiencies. Rather it seems consequent upon the operation of general principles. There are usually blindness and inadequate perception when emotion becomes the directive of human action. (in Burnett, 1938, p. xiv)

Coming from Dulles, this critique represented both a *mea culpa* and an ominous warning. The “war guilt clause” was a creative construction he had personally devised to break the impasse in negotiation over German reparations. By the time Dulles wrote this, Hitler had already exploited the clause as proof of a “stab in the back” by, among others, Jewish financiers (the Jewish bankers Max Warburg and Carl Melchior had represented Germany in the negotiations) during his rise to power (see Bottom, 2004; Klein, 1998).

Lippmann concluded *Public Opinion* with a social agenda. The section entitled “Organized Intelligence” urged large-scale investment in research on stereotypes, the construction of pseudo-environments, and the impact of blind spots on decision making. As he put it, “the study of error is not only in the highest degree prophylactic, but it serves as a stimulating introduction to the study of the truth” (Lippmann, 1922, p. 256). He envisioned this research providing a curriculum for leaders who could understand the psychology of decision, individual limitations, and blind spots— “to prepare them to deal with the world with a great deal more sophistication about their own mind.”

Impressed by Friedrich Hayek’s critiques of planning and social engineering, Lippmann would subsequently become an early participant in the formation of the Mont Pelerin Society (<http://www.montpelerin.org>). This influential group, whose members have included other Nobel Prize-winning economists such as Milton Friedman, Maurice Allais, Ronald Coase, George Stigler, James Buchanan, Gary Becker, and Vernon Smith, was an important think tank behind the rise of an alternative coalition of advocates for free market reforms that began to influence government policy in the 1970s and 1980s. Further analysis of this significant but later developing coalition is much needed but well beyond the scope of this paper.

Charles Merriam’s Influence

A professor of political science at Chicago, Merriam had been among the CPI’s more innovative propagandists. Directing public relations in Italy, he confronted the challenge of countering German initiatives: “[T]he military results of hard fighting on the part of Italy for many months were almost undone by the subtlety and audacity of the enemy propaganda” (Merriam, 1919, p. 542). The director of the CPI (Creel, 1920) effusively praised Merriam’s creative contribution to maintaining Italian commitment to the Allied cause. Among other moves, he arranged and supervised the personal visit of then–assistant naval secretary Franklin D. Roosevelt to Italy in 1918. Their personal tie would play an important role in the development of behavioral science.

Merriam was favorably impressed with Lippmann’s analysis of their craft. In his own paper on the subject (Merriam, 1919), he had already classed propaganda as among the more dangerous of the new weapons developed during the war. Reviewing *Public Opinion*, he

concluded that “this brilliant study is indispensable to any serious student of politics and of great value to the citizen without special interest in scholarship. It points the way toward the new politics and new social science that are now slowly taking shape” (Merriam, 1923b, pp. 211–212).

As leader of its committee on research, Merriam (1921, 1923a) aggressively pushed the American Political Science Association toward this “new social science,” a science founded on collaboration among disciplines. Merriam also sought Lippmann’s personal advice regarding how best to proceed. The references to their collaboration come from Box 20, Folder 810 of the Papers of Walter Lippmann at Yale University.

I have been going over your “Public Opinion” with great interest. I have been reading with particular care Part VIII on Organized Intelligence. I hope to discuss this section with you . . . in the summer. (Merriam letter to Lippmann, June 19, 1922)

In return correspondence, Lippmann requested they discuss the issue in person, obscuring the record of specific advice he provided over the meetings they held over the ensuing years. But by January 1923, Merriam could report back on progress toward founding what became the Social Science Research Council:

. . . you will be interested to know that the economists, the sociologists, and the political scientists have each appointed two members to confer on the creation of a Social Research Council. . . . Perhaps some day in the remote future we might be able to put into practice some of the suggestions in the last part of your “Public Opinion.” (Merriam letter to Lippmann, January 18, 1923)

Resources provided by the Council helped Merriam build his department at Chicago to bring Lippmann’s concept to fruition. A pipeline of doctoral students advanced what was initially called “the new social science,” but which eventually became known as the “behavioral” revolution (Dahl, 1961; Heaney & Hansen, 2006; Lowi, 1972). The first from the pipeline (Harold Gosnell, Harold Lasswell, and Leonard White) joined Merriam’s faculty to continue research while training followers. The addition of policy centers associated with the department (e.g., the Public Administration Clearinghouse) tied the school into community and federal planning. Milestones in the growing influence of behavioral science included Hoover’s commission of scholars to catalog *Recent Social Trends*, Roosevelt’s establishment of a National Resource Planning Board in the Executive Branch, and his Presidential Committee on Administrative Management. Merriam worked on all these ventures.

Measuring public opinion and measuring administrative effectiveness was a major research goal. Among other achievements in measurement, Merriam facilitated the academic success of Louis Thurstone. As Thurstone (1950) would later note,

It was a curious circumstance that the promotion to a professorship at Chicago did not come through the department of psychology. Ever since my promotion to a professorship, our work has been in the Social Science building and we have had the friendly interest of our colleagues in sociology, political science, and economics. The Social Science Research Committee has given us several research grants and some space.

The “curious circumstance” reflected Merriam’s power and influence.⁵ Thurstone would soon repay Merriam’s confidence, generating important innovations in opinion

5. “I have a letter from Professor Woodward informing me about the promotion to a professorship. I want to take this opportunity to put in writing my appreciation of the confidence that you have expressed in my suitability for your social science projects. I shall of course do my best to live up to your expectations of me in these new relations. I shall probably always remain a psychologist but if, in that capacity, I can contribute anything to the development of other social sciences as well, that will be one of my keenest satisfactions. I am enclosing a carbon copy of my acknowledgement to Mr. Woodward. I am of course at your call concerning social science projects for next year” (Letter from Thurstone to Merriam, 15 June 1927; Charles E. Merriam Papers, Box XLI, Folder 11).

measurement.⁶ Where Lippmann had been forced to speculate about the hypothetical stereotypes one might find if he could “penetrate the mind of M. Clemenceau,” Thurstone provided social scientists tools to make such measurements with reliability and precision.

Backed by SSRC funding, Thurstone applied psychophysical theory to develop the first standard technique for attitude scaling. These “Thurstone Scales” clearly reflect Merriam’s research interests, including measures of “Attitude toward German War Guilt,” “Attitude toward the League of Nations,” and “Attitude toward the Monroe Doctrine” (Thurstone & Chave, 1929). By the time attitude scales had become ubiquitous, Thurstone had moved on to make other crucial breakthroughs. Thurstone (1934) showed how to extract multiple common factors from the intercorrelations of a battery of measures. Thurstone (1931) conducted a pioneering study in experimental economics.

Later students in the Chicago pipeline benefited from Merriam’s interdisciplinary network. They spread the behavioral revolution to Yale, Stanford, MIT, UCLA, and Harvard, among other elite institutions. Simon’s doctoral research at Chicago began with attempts to rigorously measure the effectiveness and efficiency of public administration (Crowther-Heyck, 2006). In his dissertation, he (Simon, 1947; see also Simon, Smithburg, & Thompson, 1950) formalized Lippmann’s concept of the limits on rationality to explain problems in public administration. After World War II, his goal of developing a formal administrative science attracted the interest of Leland Bach, new dean at Carnegie’s newly formed Graduate School of Industrial Administration (Crowther-Heyck, 2006; Schlossman, Sedlak, & Wechsler, 1987; Simon, 1991). Simon was Bach’s first hire, established the school’s research policy, and directed hiring in all academic areas.

Backed by ample funding from the Ford Foundation, Merriam’s student translated the behavioral model of interdisciplinary scholarship into a “center of excellence” that Gordon and Howell (1959) and Pierson (1959) could hold up as a standard for the industry. As one of the GSIA doctoral students from that period put it,

Of the many distinguished faculty at Carnegie, none cast a larger shadow than Herbert Simon. Everything seemed to be within his purview—as he made contributions to economics, political science, sociology, organization theory, statistics, philosophy, cognitive science, and the list goes on. (Williamson, 2002)

Beardsley Ruml’s Influence

At GSIA, Simon extended his own theory of public administration to the firm. In doing this, he took Merriam’s institution building as an example to illuminate fundamental aspects of organizational development. Simon characterized Merriam as a Schumpeterian entrepreneur, a broker “in finding mutually acceptable terms on which a group of persons can be induced to associate, or to continue association, in an organization” (Simon, 1952, p. 1136). But Merriam’s entrepreneurship was actually a partnership. The financial resources he needed to underwrite the program were obtained through the influence of Beardsley Ruml (Karl, 1974).

6. Truly understanding the long-term implications of Merriam’s mentorship of Thurstone requires some consideration of the academic roots and branches it enabled. Thurstone’s protégé Clyde Coombs greatly advanced research on measurement and understanding of the psychology of judgment and choice. Coombs’ doctoral students, including Robyn Dawes and Amos Tversky, made even greater breakthroughs (see Dawes & Tversky, 1989). They accomplished what Lippmann had called for—the study of human error as a potential policy making prophylactic. Tversky’s students and followers have been particularly prominent among the recent wave of psychologists moving into business schools. Although it seems unlikely that any of these business school faculty members have any recognition of the connection, it was Lippmann’s persuasive power and Merriam’s skillful advocacy that made this possible.

Though little known in the field of applied psychology today, Ruml may have been its most important practitioner. His contributions were reflected less through his scholarly publications (Ruml, 1916, 1919) than by leadership of business, government, and nonprofit organizations. Ruml drafted the initial vision statement for behavioral science, one that addressed the research-based model of business education.

After earning a PhD in psychometrics, Ruml worked on the military testing program during World War I. He then joined the Scott Company, a consulting firm that used tests to solve personnel problems for such clients as Armour; Goodyear Tire; Mead Pulp and Paper; Hart, Schaffner & Marx; and the U.S. Civil Service Commission (Clothier to Ruml, May 31, 1923; Papers of Beardsley Ruml, University of Chicago Library Special Collections, Box I, Folder I). Ruml was named director of the Laura Spelman Rockefeller Memorial (LSRM) at the age of 27. The vision he articulated, "Memorial Policy in Social Science" (Ruml, 1922), persuaded influential Rockefeller board members, particularly Abraham Flexner, Raymond Fosdick, and John D. Rockefeller, Jr., to support what at the time constituted a massive financial investment (Bulmer & Bulmer, 1981).

The need for knowledge of social forces is certainly very great. Not only is it required by social welfare organizations but by business and industry, and by the agencies of government as well. It is becoming more and more clearly recognized that unless means are found of meeting the complex social problems that are so rapidly developing, our increasing control of physical forces may prove increasingly destructive of human values. (Ruml, 1922, p. 2)

Ruml described four phases of program development that would be necessary. Business and professional education were to be addressed in the later stages.

[N]ot only must scientific work in the social subjects be stimulated, but the results and training in method should be carried to those who will use it. . . . Attention should also be paid to Schools of Social Work, Schools of Business Administration, Schools of Public Administration, and Schools of Journalism. It is still too early to take up these educational institutions as an active field of interest, although they will follow logically a successful cultivation of the sciences themselves. (Ruml, 1922, p. 8)

To build behavioral science, Merriam and Ruml brought together funding from the Rockefeller, Carnegie, and Russell Sage philanthropies with social scientists interested in bridging disciplines (Bulmer & Bulmer, 1981; Fisher, 1999). Among their methods were annual, interdisciplinary meetings held at Dartmouth University from 1925 to 1933 (Karl, 1974; Worcester, 2001). These meetings joined the elite of each discipline with philanthropists and leaders from business and government for set lectures and open discussion. Mixed with recreational activities, they opened communications and built lasting relationships. They also provided a platform for SSRC organizational development. The leadership group that emerged created a system for reviewing applications to support promising research initiatives with LSRM funds.

Business research and application represented a major part of SSRC programming from the beginning. Merriam and Ruml involved business scholars in the work of both the SSRC and the Rockefeller Foundation. SSRC advisory committees on research included one on industrial relations chaired by industrialist Henry Dennison, numbering among its members John Commons, Walter Bingham (the faculty advisor to both Thurstone and Ruml), and Joseph Willits, a faculty member and later dean at Wharton. The advisory committee on business research was chaired by Gay. Members included Willits, Walter McNair of the Harvard

Business School, and Franklin Roosevelt, then governor of New York. Initial rounds of SSRC funding supported two business projects, both connected to the Harvard Business School.

The first grant backed Adolf Berle's application to study the implications of the growing separation between ownership and control in corporations.⁷ *The Modern Corporation and Private Property* (Berle & Means, 1932) identified "the corporate control dilemma" created by the growing dispersion of stock holdings, thereby providing a foundation for current conceptions of agency theory and corporate governance (Williamson, 1985).

Berle (Proceedings of the Hanover Conference, August 24, 1928; Papers of Charles E. Merriam, University of Chicago Library, Special Collections, Box 138, Folder 1) presented an early version of the evolving project at the annual Hanover meetings to an enthusiastic audience. He proposed four relationships that required further research to provide the foundation for "the political economy of our time": (1) relations between manager and owner; (2) relations between manager, peers, and subordinates in the enterprise; (3) relations between the enterprise and customers; and (4) relations between the enterprise and society, concluding that effective management "is becoming more and more what you might call, for the want of a better term, political" (p. 114). In the forward of the book, Berle acknowledged that the genesis of the project stemmed from his work as a faculty member at Harvard Business School. He attributed the interdisciplinary collaboration to the suggestions of Edwin Gay and the SSRC that "a lawyer and an economist working hand and hand might secure a more fertile result than either working alone" (Berle & Means, 1932, p. v). While stressing the essential need to study all four sets of relations, Berle and Means noted that their study could only address the first. Berle's move to the State Department under Roosevelt precluded his direct involvement in any such follow-up. But the book was an immediate success, signaling the vast potential of the behavioral revolution catalyzed by the SSRC.

The second stream of SSRC business research funding created the human relations school of management. In effect, this program did address the second of Berle's four sets of relations, relations of the manager within the enterprise. The LSRM "appropriated to Harvard University for its ongoing work in industrial psychology for the period beginning June 1, 1926 and ending May 31, 1931" (letter from Ruml to A. Lawrence Lowell, May 1, 1926; Harvard Industrial Research Papers, Rockefeller Archive Center) a total of \$60,000. These funds were allocated expressly for the purpose of appointing Elton Mayo to the faculty of the Harvard Business School.

Merriam and Ruml were convinced from their earliest meetings with Mayo that he could create breakthroughs in business research (Gillespie, 1991; Trahair, 1984). One of the ideas he had floated to Merriam was the application of his friend Bronislaw Malinowski's observational methods to modern Western society (Mayo to Merriam, March 16, 1925; Box 35, Folder 17, Papers of Charles E. Merriam, Special Collections, University of Chicago). Mayo later got the opportunity to conduct just such a study (the so-called "Bank Wiring Room Study") at the Hawthorne Works. Merriam's enthusiasm for the potential was evident:

Malinowski has been here this week and I have seen something of him. He and Mayo are rare birds, and ought to be together in fact as they are in spirit. Although I am a relatively domesticated fellow, I should like to be with them, and if we had a few more like Malinowski and Mayo, something might be started in the good old field of social science. (Merriam to Ruml, April 24, 1926; Papers of Charles E. Merriam, University of Chicago Special Collections, Box 137, Folder 6).

7. The SSRC specifically sought to involve both Columbia and HBS in the execution of the project. For reasons that are not clear from the archival record, the HBS administration eventually declined to participate. Berle does explicitly acknowledge his debts to both Gay and HBS for inspiring and shaping the project.

Ruml initially sought to help Mayo find a permanent appointment at Wharton, working through Willits. He eventually succeeded at Harvard, though only after providing the university with *all* of the funds necessary to pay for Mayo's appointment and support his research. Gay's successor as Dean at HBS, Wallace Donham explained the problem:

The thing that bothered him [President Lowell of Harvard] is that Dr. Mayo's work is so experimental that any approach to it which contemplates continued permanency is intrinsically objectionable. He feels that the question whether the experiment should keep on at the end of five years should be entirely left to the University and the results which may be obtained. (Donham to Ruml, March 30, 1926; Harvard Industrial Research Papers, Rockefeller Archive Center)

But both Merriam and Ruml took further steps to ensure the success of the experiment. Merriam solicited Mayo's assistance in a multinational study of civic socialization practices. He also sent first Thurstone (1952) and then Lasswell to assist Mayo in his research. Lasswell proved sufficiently valuable that the HBS administrators actually sought to make him a full-time appointment (Mayo letter to Merriam, March 27, 1927; Box 35, Folder 17, Papers of Charles E. Merriam). Ruml set out to connect Mayo to the industrial relations specialists in the Rockefeller businesses, in particular Arthur Young. In November 1927, Young put Mayo in contact with T. K. Stevenson, then personnel director at the Western Electric Company and the ongoing experiments on industrial lighting at the Hawthorne Works. Young subsequently made certain that the research Mayo and his team conducted was understood and appreciated by "Rockefeller officials, Bell executives, and corporation personnel directors" (Gillespie, 1991, p. 124). One Bell executive, in particular, New Jersey Bell President Chester Barnard, became an active participant in the Pareto Circle, collaborating initially with Mayo, Henderson, and Donham while formalizing his own theory of organization. He later corresponded with and advised Simon while the latter was attempting to publish his own elaboration on Barnard's theory (Scott, 1992).

Four years into the Mayo experiment, Rockefeller administrators reviewed the progress. They agreed to appropriate Harvard a further \$875,000 for a seven-year period to support what they called "an exceptionally important program of research over the entire field of industrial hazards." Noting business collaboration, the report expressed favor for the growing ties between Mayo, physiologist Lawrence Henderson, and Henry Murray from the psychology department. It urged further coordination between the business school, the Medical School, the School of Public Health, the Engineering School, and Harvard College to ensure success (Memorandum on Harvard University Research in Industrial Hazards, April 16, 1930; Archives of the Rockefeller Foundation).

Mayo's (1933) eventual interpretation of the Hawthorne studies was highly interdisciplinary, touching on politics, sociology, anthropology, economics, and psychology. That approach reflected his personal interests and the SSRC philosophy. Many others have published accounts of the impact of this work, their varied interpretations, and attendant controversies (e.g., Baritz, 1960; Gillespie, 1991; Sonnenfeld, 1982). Incontrovertible is the training Mayo provided others who would promote behavioral science for decades to come. Beneficiaries included Fritz Roethlisberger, George Lombard, and T. N. Whitehead of HBS, as well as sociologists George Homans and William Foote Whyte. Lloyd Warner, a one-time Malinowski student, helped Mayo apply anthropological method to the factory floor. Warner designed the crucial Bank Wiring Room Observation Study at Hawthorne, pioneering in development of social network concepts. At the University of Chicago, he would later pioneer applications of behavioral science to consumer marketing (Freeman, 2004; Roethlisberger, 1977).

Mayo's account of the research, and those from his associates (Donham, 1952; Roethlisberger & Dickson, 1939; Homans, 1950), established the human relations movement. The movement made the antecedents and consequences of employee morale a focus for research. Social norms and the informal relationships among employees were considered critical determinants of both productivity and morale. Participation and voice, particularly through the small work group, were seen as the tools managers could use to close managerial blind spots, improving decision making and productivity. Mayo's team devised a nondirective approach to interviewing employees which they believed capable of providing insights as to state of mind and improved morale (see Roethlisberger & Dickson, 1939; Highhouse, 1999; Roethlisberger, 1977). External recognition of these studies legitimized the school's Industrial Research Division, providing a foundation for the second of the "centers of excellence" in business education that Gordon, Howell, and Pierson would discover in the late 1950s.

PUTTING ORGANIZED INTELLIGENCE TO THE TEST

The investment in social science was put to a test with the unraveling of the Treaty of Versailles (see Bottom, 2004). That these events had been predicted by the founding members of the CFR and the RIIA gave them added confidence in their convictions, while burnishing their reputations. In 1916, when Lippmann attempted to find scholars to constitute the Inquiry, he met a serious obstacle. "On problems of first-rate importance there is a real famine of men, and we have been compelled practically to train and create our own experts" (Lippmann to Secretary of War Newton Baker; quoted by Steel, 1999, p. 129). Due to the massive investment in research and training that he and other central actors had worked to facilitate, the Roosevelt administration faced a less daunting personnel problem in 1941.

Mobilization was rapid and comprehensive. During the years prior to Pearl Harbor, the CFR worked closely with the State Department, developing plans for both war and postwar environments (Parmar, 2004). The "War and Peace Studies Groups" accelerated once the U.S. joined the conflict. The Army initiated an Army Research Branch in October 1941 to advise the Secretary of War. A staff that included Samuel Stouffer, Carl Hovland, Robert Merton, and Irving Janis organized information on troop training, readiness, and morale. Their postwar analysis of the data gathered by the Branch, *The American Soldier in World War II*, was greeted with critical acclaim; it has had a lasting impact on behavioral science (Bruner, 1983; Clausen, 1984; Wormser, 1958).

Several agencies divided the propaganda functions the CPI performed during World War I. They employed such scientists as Jerome Bruner, Donald Fiske, Hadley Cantril, Clyde Kluckhohn, Harold Lasswell, Rensis Likert, and Henry Murray (Bruner, 1983; Doob, 1947). The newly created Office of Strategic Services (forerunner of the CIA) recruited large numbers of social scientists (Office of Strategic Services, 1948; Robin, 2001; Saunders, 2000) to gather intelligence and conduct political and psychological warfare. The Harvard Business School was closely tied to various programs of the federal government (Cruikshank, 1987). The faculty initially worked on military training, then later applied statistical analysis and logistics management to such problems as procurement and strategic bombing (Roethlisberger, 1977; McNamara & Blight, 2003).

As the war unfolded, the CFR was joined in analyzing postwar scenarios by a new non-profit. Established at the instigation of Commerce Secretary Jesse Jones, the Committee for Economic Development (CED) combined a field agency to coordinate private business planning with a social science think tank. The organizing concept was to use research to craft

policy that the field organization could then propagate through small- to medium-sized businesses. Their fundamental mission was to coordinate otherwise distributed business decisions to prevent a recurrence of the unemployment and economic collapse that followed World War I. Headed by future Ford Foundation president Paul Hoffman, the CED's small research team included Ruml, Lasswell, and the third dean of the Harvard Business School, Donald K. David.

Ruml was among those in the behavioral science network whose power and influence had grown during the interwar decades. After winding down the LSRM, Ruml served for several years as dean of social science at Chicago. He left to become treasurer of Macy's, eventually becoming its chairman in 1945. In 1937 Roosevelt named him to the board of governors of the New York Federal Reserve Bank. He relied upon Ruml for advice throughout his term in office. Ruml was among the small delegation that persuaded FDR to adopt the Keynesian concept of deficit spending (Collins, 1978). When Hoffman needed to find business leaders who would understand and appreciate the role of research, Ruml was an obvious choice.

Lasswell's (1943) joint report for the CED and the CFR's Economic and Financial Study Group examined the critical postwar tasks necessary to ensure "the future of optimum employment and productivity in a free American society" given the challenge of a looming ideological conflict with Russia. Lasswell gave priority to the training of managers capable of building up the "middle enterprise sectors of American and other economies" (Lasswell, p. 14). In his view, "the training of managers can be broad enough to include basic understanding of the policy problems that confront the economy as a whole" because "anybody who has a hand in the making of important decisions is a policy maker" (Lasswell, p. 15). To facilitate large-scale training, Lasswell called for "refresher courses" for the use of management in war industries. Conferences would be held to deepen contacts between business, government, and the universities. "Special institutes may be organized to stand between the existing structure of professional schools and the top policy making posts. In many ways the most productive student body is composed of junior executives who have been out of school long enough to demonstrate their worth, and who can profit by an intensive period of study and discussion" (Lasswell, pp. 15–16). Perhaps not surprisingly, given that the study reflected the collaboration of Donald David, Lasswell's recommendations included something that closely resembles what became HBS's highly successful and widely emulated Advance Management Program. The kind of refresher courses he advocated would later form one important aspect of the Marshall Plan (Carew, 1987).

As Lasswell's report anticipated, the end of the war was succeeded by ideological struggle with communism. The professionals who assisted in prosecuting the war with Germany and Japan did not suddenly terminate their collaborations. They continued work on related projects financially supported by various federal agencies. They created new, "special institutes" including, for example, the Stanford Research Institute (SRI), founded in 1946; the National Training Laboratories Institute, founded in 1947; the Rand Corporation, founded in 1948; and HumRRO, founded in 1951 to support further expansion (Meyer, 2007; Robin, 2001). The network of elite philanthropic foundations, now financially dominated by the newer Ford Foundation, underwrote projects that could not be funded directly by the Defense Department or the Central Intelligence Agency. Projects supported in this manner included Cantril's Institute for International Social Research, Kluckhohn's Russian Research Center, the MIT Center for International Studies, and the area studies programs that yielded a scholarly basis for current cross-cultural research (Simpson, 1996). Personnel management techniques designed during the war, including the focus group (Merton, 1987) and the assessment center (Office of Strategic Services, 1948),

soon found their way to private-sector applications in product marketing, human resource management, and litigation science.

Behavioral science as the foundation for organized intelligence was institutionalized during the Truman Administration. The Employment Act of 1947 was originally conceived and promoted by the research study group of the CED. Consistent with the CED mission, the Act was intended to prevent the kind of collapse in employment that followed World War I. Its provisions included the establishment of a three-member Council of Economic Advisors as part of the Executive Office of the President. Ruml and David were actively involved in the formulation and passage of the act as well as creation of the Council. In 1950, Truman signed into law the creation of the National Science Foundation, supplanting much of the need for the private philanthropic support of the physical and social sciences with a public system supported by the taxpayer (Scott, 1992). In 1951 Truman established through executive order another tool for organized intelligence, the three-member Psychological Strategy Board. Its purpose was "to authorize and provide for the more effective planning, coordination, and conduct within the framework of approved national policies, of psychological operations." Renamed the Operations Coordinating Board by Eisenhower, it drew upon the expertise of social scientists such as Almond, Cantril, and Henry Kissinger (Robin, 2001; Saunders, 2000).

Reconstruction programs in Europe and Japan were early moves in the Cold War. The United Nations, the World Bank, the International Monetary Fund, and the European Economic Community were additional moves. All these programs were guided by veterans of the Wilson administration's failures and implemented by the generation that followed, including the army of social scientists trained during the 1920s and '30s. World Bank and CFR President John McCloy summarized the era this way: "What took place after World War I was the forerunner of the Marshall Plan. But back then the rehabilitation of Europe was done in a private capacity" (quoted by Chernow, 1990, p. 488).

EXPORTING THE RESEARCH BASED MODEL

Djelic (2004) informally mapped the "bridging network" responsible for using the Marshall Program as a vehicle to reshape the French and German political economies to adapt them to American practices. Key players on the American side of the bridge included Walter Lippmann and John Foster Dulles. On the French side, they included Georges Doriot, a Harvard Business School professor who later gained renown as a military logistics expert during World War II. During the 1950s, Doriot helped found the highly successful French school of business INSEAD along a pattern similar to the Harvard Business School. The two central figures in the network were Paul Hoffman (former head of the CED and future head of the Ford Foundation) and Jean Monnet, whose rise to prominence in political circles began at the Paris Peace Conference. The Economic Cooperation Administration (ECA), primary conduit for Marshall Program funding, employed many social scientists, including Simon and economists Richard Bissell and Thomas Schelling (Simon, 1991). Hoffman led the organization.

Under his guidance, ECA funding paid for training programs and study trips from European managers and labor leaders. The ideas that the ECA transferred to Europe coupled Keynesian macroeconomic policies with aspects of scientific management and the human relations model of management developed at HBS (Carew, 1987; Djelic, 1998, 2004). HBS-trained labor leaders were employed by the ECA to sell these programs. They succeeded in dividing the European labor movement, persuading skeptical European colleagues who

might otherwise be open to influence from communist labor leaders (Carew, 1987; Saunders, 2000).

The many initiatives undertaken by the network of Wilson-era veterans succeeded during both World War II and the early stages of the Cold War. While exporting American concepts and practices to Europe through the Marshall Plan, many of these same individuals were involved in efforts to further institutionalize them in the U.S. The Carnegie and Ford Foundations provided the financial resources to accomplish these goals. Bissell, for example, led the behavioral sciences program at Ford that made the all important investments in business education before departing to work for Allen Dulles in the covert operations program at the newly formed CIA.

In his contemporary critique of the RBM, Zimmerman (2001) mentioned that the Ford Foundation's interest in business education was motivated by an interest in opposing communism. The wider history of the RBM has shown the Gordon and Howell (1959) report to be part of a very wide social engineering project linked to the development and utilization of behavioral science. During World War II, these tools were applied to the fight against fascism. During the Cold War, they were deployed to confront Soviet expansion in Europe and Asia.

AN OBLITERATED HISTORY

The "new social science" emerged in the wake of World War I to create organized intelligence that could close the blind spots of policymakers and citizens. One of the early recruits (see Scott, 1992) of the interwar years, Merton (1957, 1966) later observed that the slow accumulation of knowledge from the scientific enterprise generates its own peculiar blind spots. Among the more striking of these blind spots is what he called "obliteration by incorporation" (OBI), or "the palimpsestic syndrome," in science.

The original source and inspiration for a scientific idea is gradually lost as that idea becomes common knowledge within the scientific community. Obliteration tends toward completion as a scientific concept moves from academia into popular discourse. Merton based his conclusions on observations from the physical sciences, but Lippmann's concept of a stereotype represents an example of the same phenomenon in the social sciences (Sills & Merton, 1991). A scientific concept widely used in popular discourse, its original source is no longer a common reference, nor is the context of its original development well understood.

Obliteration of the origins of the RBM is closely tied to the very same diffusion process. However the RBM obliteration was more complex and more complete than for the typical scholarly theory. Because so many of the contributing actors shown in Table 2 were not academics, they had very little reason to seek to maintain or advance any scholarly claims. Academics pursuing advancement had little to gain by scrupulously referencing the original contribution. Nor were they likely to be hurt by failing to do so. Many of the efforts of politicians and business leaders to fund, build, and apply social science were purposefully kept from public scrutiny. The covert activities of the Rockefeller, Carnegie, and Ford philanthropies constituted a major complaint of the Reece Committee in the 1950s. These factors have sustained and exacerbated a large blind spot that interferes with accurate perception of the past. This obliteration has coincided with and facilitated the institutionalization of social science, of business education, and of business practices. Newer generations of researchers and educators take for granted the legitimacy and permanence of these practices. Only the earlier congressional probes and the much more recent opening of foundation archives provide an opportunity to close the gap in understanding.

CONCLUSIONS

The conventional history of the research-based model of business education is highly selective and quite misleading. Conventional accounts trace its origins to the analysis and recommendations of a small group of economists—Gordon, Howell, and Pierson in the 1950s (Bennis & O’Toole, 2005; Cooley, 2005; Mintzberg, 2004). By this history, accomplishments and failings of the model must be measured by studying the consequences since 1960, when the published recommendations began to reshape the industry.

A broad coalition of business leaders, public officials, professionals, and scholars developed behavioral science during the 1920s and ’30s. Beardsley Ruml articulated the vision that convinced business leaders to underwrite this project. His arguments reflected ideas expressed by Lippmann, Merriam, and business leaders such as Owen Young. The long-term payoff Ruml described was a curriculum for training future leaders in business and government. These were leaders meant to have an understanding of the blind spots in their own thinking and the scientific tools available to close those blind spots. As the youngest member of Table 4, Ruml’s ability to project influence over time on behalf of that vision extended well beyond that of the others.

Working in concert with Merriam, he helped to create the interlocking network of philanthropic support for behavioral science, the interdisciplinary network of scholars, and the two “centers of excellence” in business education that Gordon, Howell, and Pierson would later discover in the 1950s. Indeed, Ruml himself used the centers of excellence concept to dictate funding for developing basic social science in the 1920s. Through the research program at the University of Chicago, Merriam and Dean Ruml developed behavioral scientists like Thurstone, Gosnell, Lasswell, Key, Almond, and Simon. Through the education and promotion of Simon, their model came to the Carnegie Graduate School of Industrial Administration. But the partners also affected breakthroughs in business research through the SSRC and the Harvard Business School. Their persistent efforts to establish Elton Mayo as an industrial researcher bore fruit, bringing long-term change at HBS and the birth of the human relations movement. But their success depended on the endorsement of business leaders like Rockefeller, Young, and Lamont who could mobilize vast financial resources.

Decades of growth in basic science enabled successful application of behavioral science during the world war and the Cold War. For Ruml, this success provided ample reason to contribute toward completion of the final phases of the vision he sketched for the Rockefeller Board. Later decades of work with the Committee for Economic Development, executive education programs he conducted on behalf of the Council on Foreign Relations,⁸ and the advice that he provided to Gordon and Howell during the writing of the Ford Report provided vehicles for pushing implementation of his initial plan forward. His close friends and associates, Hutchins and Hoffman, were the leadership team at the foundation that initiated the program of funding business education. Hutchins personally referred to Ruml as “the father of behavioral science.” Interestingly, Gordon and Howell listed Ruml as one of a number of business leaders they consulted in preparing their report. Obviously, his real role in creating the RBM was considerably greater.⁹

8. Ruml was asked to join the CFR’s Committee on Studies in 1947. In 1957 he led CFR sponsored seminars on “Establishing a Business Abroad” to an audience of executives from Aramco, Mobil, Chase Manhattan, RCA, and other prominent firms (Papers of Beardsley Ruml, Box I, Series I, Folder 4, University of Chicago).

9. Ruml’s contributions were sufficiently obliterated by incorporation that Ford Foundation officers William McPeak and Don Marquis were astonished to read Ruml’s “Memorial Policy in Social Science.” Marquis “said his first reaction was one of shock that even the most advanced planning of today contains no elements that did not exist in yours . . . one should credit you with a great deal of the advance made throughout the field in the past three decades” (McPeak to Ruml, January 2, 1952; Box III, Papers of Beardsley Ruml, Special Collections, University of Chicago).

The present financial crisis is likely to provide an additional impetus for reform of basic practices in business education. It has already brought big vigorous debates over the New Deal fiscal policies (Krugman, 2008) that Ruml persuaded Roosevelt to adopt (Collins, 1978). The obliteration of so much of this history has impeded thoughtful examination of changes in business education. Indeed, the more complete examination of that history given here yields a new interpretation of recent failings of the RBM. Mintzberg (2004) decried the current state of business research and educational practice because it has moved so far toward specialization of function. Even the Carnegie Graduate School of Industrial Administration moved away from the interdisciplinary model that Leland Bach and Herbert Simon established there. But the functional silos for teaching and research departed not merely from the Bach–Simon vision or the Ford Foundation blueprint for RBM. They represent a more basic failure to implement the original Ruml–Merriam Rockefeller Memorial vision for behavioral science.

The potential for such specialization, which he believed would lead scholars toward a counterproductive trade union consciousness, toward protection of academic turf, greatly concerned Ruml from the beginning. He believed professional associations were promoting this mentality in the 1920s and '30s. Ruml was concerned about the effect this specialization would have in stunting good basic social science. He worried that it would stymie the interdisciplinary model the SSRC and Hanover meetings were meant to promote (Bulmer & Bulmer, 1981).

Judged by the enduring contributions to basic science made by genuine interdisciplinary behavioral scientists like Mayo, Thurstone, Simon, Bruner, and Merton, there may be merit to Ruml's concern. At a time when psychology programs were rigidly focused on the study of overt behavior, purging all discussion of the mind, these interdisciplinary scholars provided tools and theories for penetrating, modeling, and changing minds. Unfortunately, the type of interdisciplinary "schools of social relations" that housed them began disappearing as the program of propagating the RBM model beyond Carnegie and HBS accelerated. The social scientists other business schools could begin hiring, with the financial support of the Ford Foundation, began looking less and less like the type Ruml had described to the Rockefeller Board. The move toward specialization in business research may be a reflection of this broader trend toward much narrower specialization in the social sciences themselves.

To effectively utilize them, business school administrators must acknowledge and adjust to the changed nature of the new PhDs they are recruiting from the social sciences. Implementing the RBM as the Ford and Carnegie reports envisioned would require adjustments in faculty development. Before embarking on research careers in business schools, these highly refined specialists would benefit from brief postdoctoral programs. The programs should include some business and academic history. At a minimum, these researchers should learn the original logic behind this model of professional education. Greater engagement with faculty from other disciplines and with business professionals should be facilitated, promoted, and rewarded.

But the mutation of the interdisciplinary research called for by the RBM blueprints into today's specialized silos inside business schools also seems closely related to the rise of an alternative paradigm in social science. The rational choice paradigm has supplanted the behavioral model as the primary approach to research and teaching in many business schools. Critics of business education who advocate greater investment in the RBM model (e.g. Cooley, 2005; Zimmerman, 2001) are actually (presumably unwittingly) advocating something novel that Gordon, Howell, and Pierson never contemplated. They seek a mode of business education based on rational choice theory that had no place in the Ford or Carnegie

reports (Cooley, 2001). No full-scale justification of this alternative vision has yet been provided. In his presidential address to the American Economic Association, Robert Gordon (1975) warned his own profession against the emerging rational choice paradigm. He viewed it as dangerous and counterproductive.

The development of this alternative paradigm as a viable alternative approach was facilitated by the growth of a conservative network of philanthropies and think tanks explicitly modeled after the earlier behavioral network.¹⁰ Historians have only just begun to document the development and expanding influence of this parallel social network (Van Horn & Mirowski, 2005; Djelic, 2006). The influence this network exerted on public policy in pursuit of deregulating various industries while promoting tax cuts has been particularly dramatic (Micklethwait & Wooldridge, 2004). Economic problems caused by failure to regulate the financial services industry raise serious questions about the social science theory promoted by this network. The path by which this paradigm came to business education, and the relation between those developments and current business problems, is a subject deserving of much more research attention. As an anonymous reviewer pointed out, Walter Lippmann represents an important linking pin between these two paradigms. After advancing the concept of “organized intelligence” that inspired the Chicago School of Political Science (Heaney & Hansen, 2006) Lippmann was subsequently involved in the founding of the Mont Pelerin Society that facilitated the growth of the contrary Chicago School of Economics that would eventually eclipse it (Van Horn & Mirowski, 2005).

But a very large body of empirical evidence has contradicted many aspects of rational choice as a descriptive theory. Very recent resurgent interest in behavioral approaches to economics, game theory, law, operations, and finance suggests that limitations of the paradigm may finally be evident to even former proponents.

Obliteration by incorporation appears to have fundamentally complicated and confused debates about the two paradigms. Opposition to a behavioral approach has frequently focused on the source of many recent ideas about nonrational behavior, laboratory studies using inexperienced college sophomores making decisions of little consequence. But as this study has shown, the idea of bounded rationality was inextricably linked with the vision of social science that business leaders invested in. Members of this elite coalition understood the limitations of the human mind, as well as the likelihood of outright stupidity by the smartest of people working on complex problems when the stakes were highest (Burnett, 1938; Keynes, 1920; Lippmann, 1922; Mitchell, 1930; Nicolson, 1933). They invested in social science to create tools to promote understanding of these fundamental aspects of human nature, not to deny their existence.

Ruml (1930, p. 102) expressed what was the consensus of the time among business leaders, economists, psychologists, sociologists, and political scientists:

Today students of human behavior agree as to the tremendous importance of irrational factors in shaping the conduct of an individual. There may be some difference of opinion as to the precise weight which should be given to such factors, but that it is very large there can be no doubt. The wider acceptance of this contribution to the understanding of human behavior is nevertheless relatively recent. It has not been long since the phenomena included in the fields of history, political science, economics, and even psychology were largely interpreted in terms of human beings rationally motivated and acting for their best

10. The conservative *National Review* described the influential John M. Olin Foundation “not as a charitable foundation, but as a source of venture capital for the vast right-wing conspiracy” (Miller, 2005). The occasion was the termination of the fund, a death that John M. Olin had insisted upon after studying the organization and policies of the Ford Foundation.

interests. The shift in emphasis from rational to irrational motivation is a contribution of the first order to our understanding, and it is affecting profoundly the social sciences.

Irony abounds in the ignorance of social scientists as to this earlier consensus. In the last two decades, behavioral decision theorists have demonstrated through rigorous experiments that individuals are susceptible to framing effects that systematically reverse their preferences. One form is the seemingly anomalous pattern of choices that have been called “mental accounting” (Thaler, 1985). Prelec and Loewenstein (1998) recently formalized a model of mental accounting that predicts decision makers will demonstrate a pattern of “debt aversion” that makes seemingly irrational installment payments attractive.

As a psychologist who also ran the finance department of a major retailer, Ruml keenly understood the bounded rationality of consumers’ mental accounting. When Roosevelt needed to raise revenue to support American entry in World War II, Ruml provided the policy solution eventually passed by Congress in the Current Tax Payment Act. Ruml’s “pay as you go” policy required employers to withhold income from taxpayers’ paychecks “at the source” rather than accumulating it into one large bill for government services due at the end of the year (Bulmer & Bulmer, 1981; Twight, 2006). For generations of taxpayers, the so-called “Ruml Plan” psychologically transformed a large payment into a perceived end-of-the-year rebate.

That this exercise in mental accounting was enacted, succeeded, and has endured for decades provides clear evidence that framing effects matter for policy. Behavioral decision theorists have so far failed to recognize that the author of the combined vision statement for behavioral science and the research based model of business education was also the architect behind this enduring framing effect. Rather than a mere laboratory “parlor trick,” framing effects are the foundation for federal tax policy.

Understanding history is likely to remain a significant blind spot for present- and future-oriented social science researchers. But sound curriculum reform for business education will be far easier to achieve if they have some appreciation of the long, uneven history of the partnership with behavioral science. Behavioral science will be facilitated by better understanding of the complicated networks that shape opportunities for different forms of social science research. It is hoped that this paper will contribute to shrinking these blind spots.

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