THE RATIONAL RECONSTRUCTION OF SOCIETY*

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In the eighteenth century a Great Transformation began — a transformation rooted in even earlier times and still in progress today. This transformation is characterized by the decline of primordial institutions based on the family as the central element of social organization and the replacement of these institutions by purposively constructed organization. Sociology is itself a product of this transformation, and the stages in the Great Transformation are mirrored by changes in the central foci of sociological theory and research. The decline of primordial social organization has been accompanied by a loss of informal social capital on which social control depended before the transformation. The design of purposive organization is necessary to compensate for this loss; this design is an emerging central focus for sociology. I introduce an example, "bounties on children," to illustrate this point.

I recently took a canoe trip with two of my sons down the Wisconsin River and a portion of the Mississippi. We began the trip in a setting much like that experienced by Indians on the same river: Evidence of beavers abounded on the riverbanks; great blue herons, snowy egrets, and sandhill cranes flapped away as we approached; an American bald eagle soared overhead. We made our way down the river at three or four miles per hour. When we reached the Mississippi on the third day, nature retreated to the backwaters off the main channel. We saw barges traveling at maybe twice our speed, pushed by Mississippi river tugboats, descendents of the commercial riverboats that have plied that river for more than two centuries. River towns, electric power plants, and industrial cities interrupted the natural environment. As we progressed, we heard the whistles and clackety-clack of trains along the Iowa bank, moving past us at more than 10 times our speed. Power boats sped up, down, and across the river. Toward the end of our trip, a military jet took off nearby, screaming past us at nearly the speed of sound.

In this description, I draw attention to the changes in physical environment and in transportation my sons and I observed as we traveled: From the canoe at 3 or 4 miles per hour, to diesel-powered river traffic at 7 or 8 miles per hour, to a train at 50 miles per hour, to a jet at nearly the speed of sound. Accompanying this change was a change from beavers and great blue herons to the hustle and bustle of modern commercial, industrial, and leisure activity, all taking place with the aid of machines. One way of describing these changes is as a progression from a "natural" or "primordial" physical environment to a "constructed" physical environment.

In this paper I first describe a transformation that has occurred in social organization that is at least as profound and far-reaching in its implications as this transformation of the physical environment.[1] Second, I suggest that this transformation has proceeded via several changes in the economy and the social structure, and indicate just what these changes have been. Third, I suggest that the discipline of sociology came into being as part of the early stages of this transformation, and indicate how the discipline has shifted its central focus as these changes have taken place. Fourth, I describe how the transformed social structure, which characterizes society at the dawn of the twenty-first century, differs from the structure it is replacing and, to a large extent, has already replaced. Finally, I argue that the transformation of society, taken in its entirety, is so fundamental that it requires a change in the very stance of the discipline to its subject matter.

THE BEGINNINGS OF THE GREAT TRANSFORMATION

Two revolutions have special relevance for the societal transformation: the French Revolution in

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[1] I discuss this transformation and its implications in greater detail in *Foundations of Social Theory* (Coleman 1990, pt. 4).

1789 and the Industrial Revolution, which began about the middle of that same century in England. The French Revolution was not merely a political revolution; it was a massive social revolution, fueled by the ideas and ideals of the Enlightenment. These ideas aimed to bring about a society based on reason. They marked the end of a social and political system based on tradition, inherited privilege, and personal caprice. The revolution demanded bureaucracy and the rationalization of the social and political system. The Industrial Revolution in England began a transformation of the economy from sets of weakly interdependent households, most of which produced most of what they consumed, to an economic system in which most production took place in factories and most of what was consumed was purchased in markets.

The French Revolution and the Industrial Revolution were part of a long-term transformation in social organization, one that parallels changes in the physical environment. The transformation is from what I call "primordial social organization" to what I call "purposively constructed social organization." Primordial social organization develops through birth and the social relations of blood ties. The elementary social unit is the family, and in nearly every society before these two revolutions, the social structure grew outward from this elementary unit, and economic production took place in and around it. Corporate bodies outside the family were (and in some societies, still are) in some way derivative of the family. The clan and the tribe, the manor of the Middle Ages, and the feudal structure are only the most obvious. Guilds also were perpetuated through hereditary succession; society took the family and kinship relations as the basis for larger social structures. The Christian Church could be seen as a partial exception. Yet the older religions emanated from and were inseparable from specific ethnic groups, and the Christian Church was ordinarily adopted by an ethnic group as a whole. Throughout history, a person had been born into a religious identity as part of family and ethnic identity.

A social invention preceded these two revolutions and made possible a different social structure — a different form of corporate body, one that could be entirely independent of the family and its extensions. I call this a new corporate actor because the law — first in England and later on the Continent — recognized it as new. This new corporate actor came into being slowly, beginning around the thirteenth century, as churches, towns, and boroughs engaged in economic activities on their own, independent of any manor, independent of the King, under the direction of agents, such as the burgesses of a borough. These new corporate actors required a conceptual invention in the law (and thus in the legitimate structure of activities that compose society). An Italian jurist, who became Pope Innocent IV in 1243, provided just that. He termed the new actor a *persona ficta*, a "fictitious person" with legal standing like a natural person, but who had no physical corpus (Gierke [1900] 1968, p. xix).

This new legal form was widely used in England in the fourteenth century, where boroughs gaining charters from the King came into legal personhood. These boroughs (such as Cambridge, which received a charter of sorts from King John in the twelfth century) paved the way for the great trading companies of seventeenth and eighteenth centuries (such as the East India Company) and more generally for the modern corporation and voluntary associations of all varieties. But as the English historian Maitland (1898, pp. 18–22) showed, this corporate form came into being only after a tortuous working-out of the concept of fictitious person by jurists deciding cases involving boroughs chartered by the King. This concept, through the law of limited liability, became the vehicle that created the modern corporation.

This legal change, this creation of a new kind of corporate actor not grounded in the family, made possible a new form of social structure — one that contrasts with primordial social organization and can be described as purposively constructed organization. This was not merely the kind of social change that sociologists have long pointed to: the replacement of folk society by urban society, the shift from Gemeinschaft to Gesellschaft, the move from mechanical solidarity to organic solidarity. This was the arrival of a new kind of actor, an actor with rights and responsibilities recognized by law, one that could sue and be sued; but unlike earlier actors, this actor had no physical corpus — it had rights and responsibilities of its own not traceable to a natural person. In contrast, the family and its extensions were not actors in themselves; it was the person at the head who was the actor. Family members were encased in the family, and the family was part of a more encompassing body. The social structure, from a person's perspective, took the form of a set of concentric encompassing circles. (For a discussion of the concen-

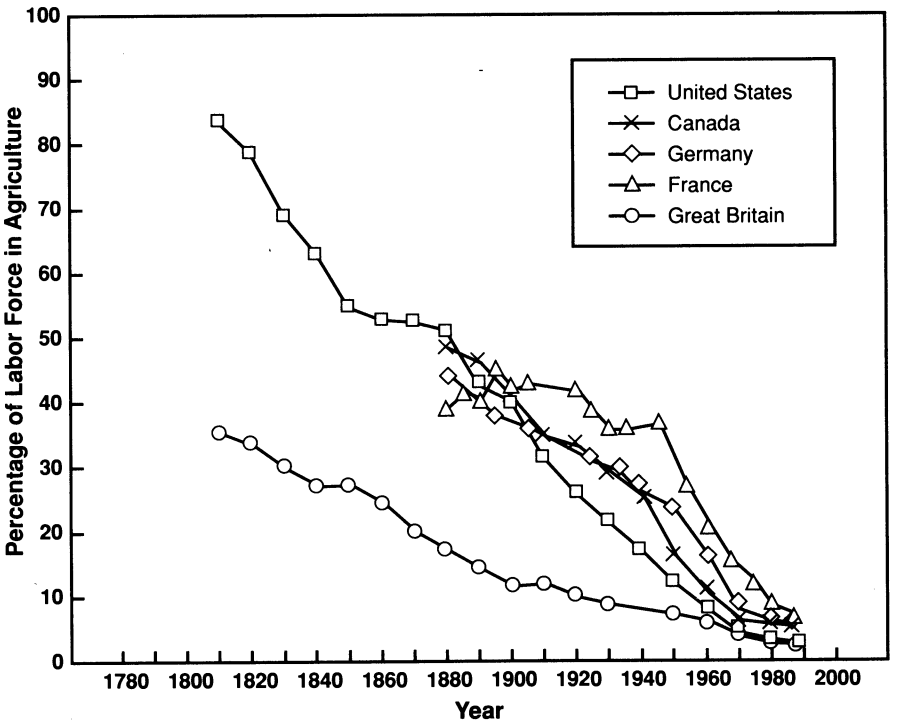

Figure 1. Percentage of Labor Force Engaged in Agriculture in Five Countries: Nineteenth and Twentieth Centuries

Sources: Data for France and Germany from the nineteenth century through 1975 and for Great Britain in 1961 and 1971 are taken from Peter Flora (1983, pp. 494, 512). Data for Great Britain from 1811 to 1951 are taken from Mitchell (1962, p. 60). Data for Canada from 1881 through 1951 are taken from Urquhart and Buckley (1965); for 1961 and 1971 from Statistics Canada (1976, Catalogue 94–715, vol. 3). Data for the United States through 1970 taken from U.S. Bureau of the Census (1975, Tables D167–181; 1990, Table 650). Data for all countries for 1980 and 1987 are taken from United Nations (1990, Table 16).

tric character of the social structure of the Middle Ages, see Simmel [1908] 1955, pp. 146–50.)

Altogether one might say that in the Middle Ages, the concept of a corporate actor, independent of persons, and the concept of individuals, independent of corporate bodies surrounding them, had not yet arrived. In fact, the concept had arrived verbally, though not in practice. Pope Innocent IV's concept of the "fictitious person," in the thirteenth century, captured well the character of what was to become an important creature in society.[2] This fictitious person, the corporation, provided not only the social structure for the great trading companies of England in the seventeenth and eighteenth centuries, but later, in the eighteenth and nineteenth centuries, supported the Industrial Revolution as it transformed the economies of England and then other countries in the West. As this revolution transformed economies it did so by moving productive activity out of agriculture and other household production, and by moving people into cities. This change is illustrated in Figure 1, which shows the fraction of the labor force engaged in agriculture in three European countries (Great Britain, Germany, and France) and in the United States and Canada in the nineteenth and twentieth centuries.

The movement out of agriculture occurred first in England, where the Industrial Revolution began. There, already by the 1811 census, only 35 percent of the labor force was in agriculture, a percentage not reached until about 1910 in Germany, the United States, and Canada, and not until 1930 in France. This movement of people off the land into cities and the movement of production from households to factories and other specialized workplaces are the major indicators of the transformation from primordial social organization to purposively constructed organization. As

[2] This is indeed a legal creation. Muslim law, for example, has no place for actors who do not have their ultimate locus in the family.

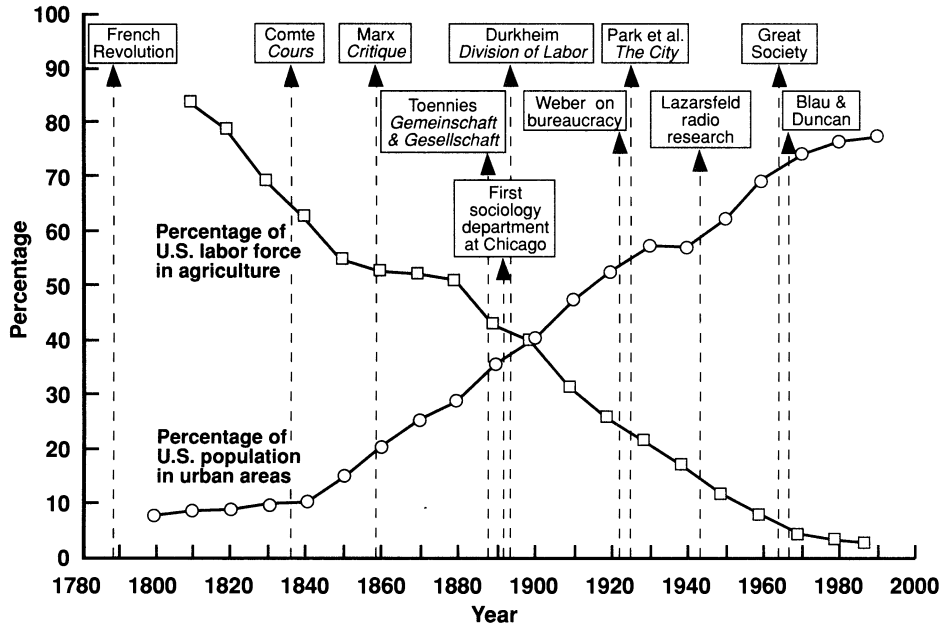

Figure 2. Changes in U.S. Social Structure and Benchmarks in Sociology: 1789–1990

Sources: See the source footnote to Figure 1 for percentage of U.S. labor force in agriculture. Urban residence data are from U.S. Bureau of the Census (1975, p. 11, Table A43-56; 1990, p. 17, Table 19).

Maitland (1898) wrote, "The village was not corporate. Corporateness came of urban life" (p. 23).

SOCIAL CHANGE AND SOCIOLOGY

Now I return to sociology, which is itself a product of this transformation. As this new corporate purposive form of organization flowered in the eighteenth and nineteenth centuries, social science came into being, and the idea of sociology was born. Furthermore, the development of sociology followed social changes in society. This can be seen in Figure 2, where the percentage of the U.S. labor force in agriculture and the percentage of the U.S. population living in urbanized areas are shown, along with benchmarks in sociology.

Figure 2 begins with 1789, the year the French Revolution began. In 1810, the first year for which data are available in the United States, 84 percent of the U.S. labor force was still in agriculture. In 1838, when Comte ([1832–1840] 1855) coined the term "sociology" the percentage was down to 65 percent. Thus the nineteenth century brought both movement off the land, into the new factories of the Industrial Revolution, and also a new intellectual direction, neither philosophy nor economics, but Comte's new science of society.

The discipline of sociology might be said to have its roots in the social changes that led to the decline of feudalism, the rise of the Enlightenment in the eighteenth century, and to the French Revolution at the end of that century. Sociological theory took its shape and form from the social changes occurring then.

As sociology developed, its changing focus can be characterized by major social changes that were occurring in Western society and by the theoretical work that described and analyzed these changes. For example, Comte's work was a distillation of the Enlightenment ideas of progress, change, and escape from the static conception of the world that characterized religious thought. Even more clearly, Karl Marx's work in the middle of the nineteenth century was a response to social and economic changes. With the end of feudalism, as the market replaced the encompassing feudal estate, wage labor began to replace personal subordination, and money began to replace payment in kind.

A second benchmark in the history of the emergence of sociology might well be be Marx's ([1859] 1913) *A Contribution to the Critique of Political Economy*, published in 1859, for in this paper Marx described these changes. The social changes in the 70 years between the French Revo-

lution and Marx's publication were extreme. For example, in the United States in 1859 only 53 percent of the labor force was in agriculture, and in England only about 25 percent. Responding to these changes, Marx wrote, "In broad outlines we can designate the Asiatic, the ancient, the feudal, and the modern bourgeois methods of production as so many epochs in the progress of the economic foundation of society" (p. 13).

An early major social change to create a place for itself in social theory is the change Ferdinand Toennies pointed to in his *Gemeinschaft und Gesellschaft* ([1887] 1957). The distinction that Toennies drew between community and society was a distinction that a century earlier, in 1787, would hardly have been possible: Society then was merely a collection of communities, with a market town, like London or Paris, in its midst. The difference to which Toennies pointed was a distinction between a social system in which everyday life consisted of local, face-to-face relations with a relatively small and stable set of persons in relatively fixed institutions, and one in which many relations were no longer face-to-face nor confined to locality and institutions were impersonal rather than personal.

Note in Figure 2 that when *Gemeinschaft und Gesellschaft* was published, about 45 percent of the U.S. labor force was still engaged in agriculture — the percentage was about the same in Germany, France, and Canada, though much smaller in England. Already in the United States, 35 percent of the population lived in urban areas. Throughout much of Europe and North America, the contrast between community and society was becoming sharper. The experience of "society" rather than "community" was beginning to characterize the lives of a large fraction of the population for the first time.

Toennies's work was followed very shortly by Durkheim's ([1893] 1947) *Division of Labor.* Durkheim discussed, not the structure of social organization, but the structure of economic production. When the book appeared, about 40 percent of the French labor force was in agriculture: Agriculture, which had been the principal form of household production in a non–division-of-labor mode, was now being replaced for a large fraction of the population by wage labor, much of it in the new corporate actors.

Durkheim's book was published in 1893, one year after the formation of the first university department of sociology at the University of Chicago. The University of Chicago was located in a rapidly growing city, a product of the social and economic changes to which Marx, Toennies, and Durkheim had pointed. Appropriately, most of the major works to emanate from the Chicago department concerned cities, especially the social disorganization that characterized them. Nineteenth-century works had characterized the major social change from the feudal manor to the market, from community to society, from a household-based economy to a division of labor. From 1915 to 1929, Robert Park and his students in Chicago characterized the ecological growth of the city and the social disorganization that accompanied it. Park, Burgess, and MacKenzie (1925) published *The City*, capturing these changes. This work, published when 25 percent of the U.S. labor force was in agriculture and when 50 percent of the U.S. population lived in urban areas, was firmly about society, not community. Park et al. took as given the division of labor and the non–family-based mode of production that accompanied it as they examined the social structure of the newly dominant city life.

Another work in sociology, equally symptomatic of the changes occurring at that time, was Weber's ([1921–1922] 1968) essay on bureaucracy. The bureaucratic form of social organization, once characteristic only of government, was coming, with the growth of the large corporation, to be characteristic of a portion of the economy as well. It was a form of social organization that characterized what Weber called the growing rationalization of society.

But in the larger society, the city was the center of attention for sociologists. Not only the "Chicago School" of Park and Burgess, but other sociologists as well focused on the city. Weber (1921) published *The City*. Much of the empirical work at the time was on cities, large and small. This included the famous *Middletown* by Lynd and Lynd (1929), a study of social stratification in a small city in midwestern United States.

Note that all this work focused on locality. This focus ended with the next major social change, which became evident in the 1930s: A national economy began to replace the local economy for many products. In the United States, automobiles were produced in Michigan and Indiana and sold nationally. Nationally manufactured washing machines replaced locally constructed washboards, and refrigerators replaced iceboxes. Social communication became national rather than local, through radio, national magazines, and movies. Sociology followed this change in the 1940s and 1950s with studies of

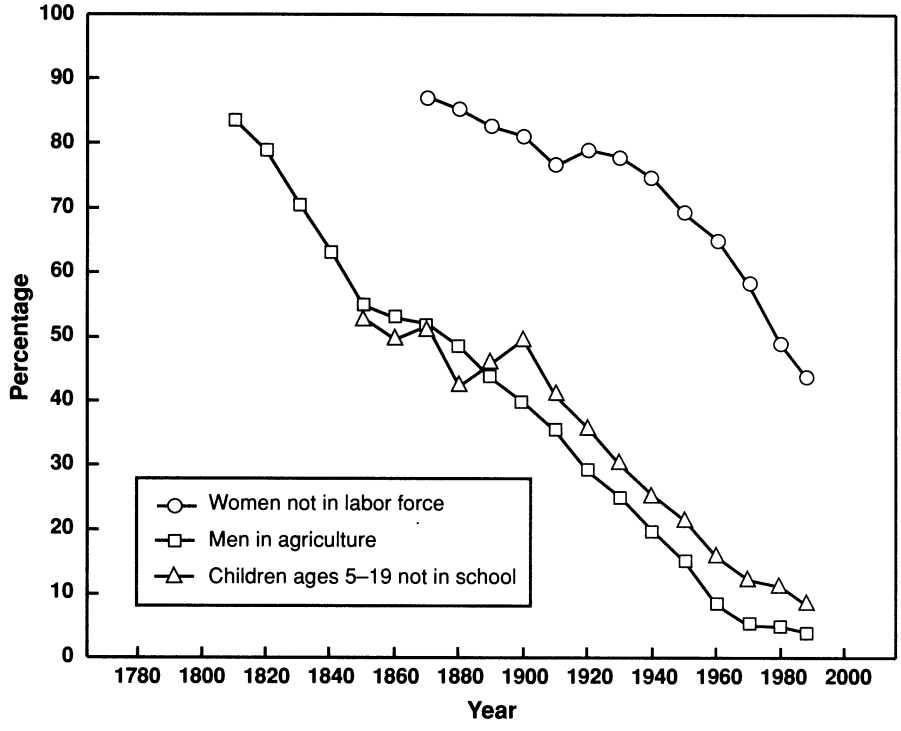

Figure 3. Evacuation of the U.S. Household: Percentages of the Male Labor Force in Agriculture, Women Not in the Labor Force, and Children Not in School, 1810–1987

Sources: Data for men in agriculture are from U.S. Bureau of the Census [1975, Tables D167–181 for 1810 through 1860, Tables 11–25 for 1870 through 1970; 1990, Table 650, for 1980 and 1988]. For 1810 through 1860, male and female labor force data are not reported separately. I have assumed that the proportion of the male labor force in agriculture is approximately the same as the proportion of total labor force in agriculture, an assumption which is correct for the next decade, 1870. Then, the percentage of total labor force in agriculture was 52.5, and the percentage of the male labor force in agriculture was 52.5. Data for children not in school are from U.S. Bureau of the Census (1975, Table H433–441; 1990, Table 214). Data for women in home are from U.S. Bureau of the Census (1975, p. 128, Table D11–25; 1990, p. 378, Table 624).

mass communication, public opinion, market research, audience research, and voting, all carried out through survey research based on samples of populations. The new direction was suggested by the title, *Mass Persuasion*, an early work in this area by Merton, Fiske, and Curtis (1946) which analyzed the World War II war bond appeals on radio by the popular singer, Kate Smith. Perhaps the best early marker for this change is *Radio Research 1942–43*, edited by Lazarsfeld and Stanton (1944). Not surprisingly, this work came out of Columbia University in New York City, the heart of the new mass communications, advertising, and market research industries.

Survey research, mirroring the social change it measured, held center stage in sociology through the 1940s and 1950s, and into the 1960s. Symptomatically, research in social stratification, which in the 1920s, 1930s, and 1940s had focused on single towns or cities (Middletown, Elmtown, Yankee City), in the 1960s reflected the shift to a national economy. In the United States, a marker for this shift is Blau and Duncan's (1967) *The American Occupational Structure*. This work, along with much that has followed it, was based on a nationally representative sample, characterizing stratification not in a given locality (the shift to a national economy made local systems less relevant), but in the country as a whole.

Work in communication, audience, and market research has been succeeded by a different sociological focus that reflects still another social change. In the United States, the social change began with the Great Society programs in 1964; the research that accompanied it is called evaluation research or social policy research. Since that time, research funded by the National Institutes of Health, the Department of Education, the Department of Labor, and other agencies has constituted a virtual explosion of social policy re-

search. In Europe, social policy research grew as well, taking off only a few years later. This research has become the central core of applied social research since the mid 1970s. The areas have been many: drug use and drug control programs, schools, job training programs, delinquency-prevention programs, income-maintenance programs, mental health centers and health maintenance organizations, and many others.

Social policy research is designed to evaluate the functioning of new constructed organizations, and it follows the decline of primordial institutions. The social change reflected in social policy research is, I suggest, a response to another social change that can be seen in Figure 3. In this figure, the proportion of the male labor force in agriculture in the United States (approximately like the graph in Figure 1, which includes both males and females) is accompanied by two other graphs: the proportion of children ages 5 through 19 not in school, and the proportion of women not employed in the paid labor force. These three graphs together indicate a massive movement out of the household, a primordial institution with diffuse and multiple functions, into narrow-purpose constructed organizations, the workplace and the school. This figure shows, in effect, the evacuation of the household during the day — a process that began in the nineteenth century and will be largely complete by the twenty-first. This evacuation of the household, together with the social policy research described earlier, represents a social change that can be described as the decline of primordial institutions and their slow replacement by constructed organizations.

In this look at the past I have charted the parallel paths of society and sociology: Although the omissions are many, this shows in broad strokes how central changes in social organization have generated central foci in sociology.

One might characterize these changes systematically, as in Table 1. (1) Among the social structural changes was change in the mode of production, with industrial production replacing agriculture and the factory replacing the manor. Two sociological descriptions of this change were by Marx and Durkheim. (2) The locus of residence changed from the community of villages to the society of cities. Sociologists Toennies, Park, and the Lynds described these changes. (3) The third change, brought by technology, was the transcendence of place, as electronic communication made possible long-distance interactions, and geographic mobility created social organization that spanned cities, states, and nations. Again, this change was reflected in new work by sociologists — Lazarsfeld studied mass communication in the 1940s, and Blau and Duncan studied national occupational structure when local labor markets were no longer wholly confining. (4) A change which has been proceeding along with the previous three changes, is the slow erosion of primordial institutions. This erosion, however, has quickened in the final third of the twentieth century. The technological changes in modes of production, in transportation and communication, which generated the first three social changes I have described, have combined to hasten the decline. The social programs, along with the social policy research which accompanies them, are examples of constructed organization, often stopgap in character, that have been introduced as the decline has proceeded.

Table 1. Stages in the Development of Society and Sociology

Societal Change	Described by Sociologists
Change in mode of production	Marx, Durkheim
Change in locus of residence	Toennies, Park, Lynds
Transcendence of place	Lazarsfeld Blau and Duncan
Erosion of primordial institutions	Social policy research

A DIFFERENT STRUCTURE

These changes, taken together, have led away from primordial social organization toward purposively constructed organization; and constructed social organization is different in fundamental ways from primordial organization. These differences taken together demonstrate the depth of the transformation.

Positions as Elements of the Structure

One difference has to do with elements of the structure. In primordial social organization, built ultimately around the family, the internal structure of corporate bodies consists of persons and relations between them. Purposively constructed corporate actors also have an internal structure — but the elements of the structure are not persons. They are *positions* or *offices*. Persons, though more than incidental to this structure, are merely temporary *occupants* of positions. Before this new corporate actor was fully developed, say in seventeenth century France, offices were part of the

governing organization, but these offices were not merely occupied. An office was owned by the person who held it and it could be sold to another. In contrast, the new corporate actor has an existence independent of any person, and it has an independent lifetime as well. Relations are between positions, not persons. If relations between persons per se develop, they are sometimes seen as harmful to the goals of the corporate actor, the organization. (For example, Dreyfuss [1952], describing German and Austrian firms in a paper first published in 1938, cited one of the rules of an Austrian bank: "Section 28. The management look unfavorably upon personal social relations of its employees outside the Bank" [p. 262].)

Relations Among Positions, and Between Persons and the Corporate Actor

The new corporate actors specify the rights held by occupants of all positions, and the external legal system does not intervene. For example, civil courts will not hear disputes between one internal division of a firm and another, following what is known as forbearance doctrine (Williamson forthcoming). The reason is clear: These are disputes between *parts* of an actor, not between independent actors; and the actor itself, the firm, has the right to decide the dispute.

Matters are very different when the dispute is between an employee, a person, and an employer, a corporation. These are two independent actors, each with certain civil rights, and civil courts have jurisdiction over such disputes. To look at it another way, the relation between employee (a person) and employer (a corporate actor) is a relation between two independent actors; the relation between two divisions of a corporation is simply a relation between two dependent parts of a structure, neither of which have rights beyond those allocated by the corporate actor of which they are part.

Criteria for Viability

A "corporate actor" is a constructed organization that stands as a principal in relation to each agent in the organization. The agents have not only a transaction with the principal, but as occupants of positions they also have transactions with one another — they must, if their joint activity is to produce something of greater value than the sum of their independent activities. But in a formal organization, the transactions or relations among agents, as occupants of positions, need not be independently viable. The principal (corporate actor) establishes a structure of transactions among positions; each agent occupies a position and provides services to that position, and the joint activity among the positions creates value for the corporate actor. The condition that must be met was described by Simon, Smithburg, and Thompson (1951):

> An organization is "solvent" — and will continue in existence only so long as the contributions [from agents] are sufficient to provide inducements [from the corporate actor] in large enough measure to draw forth these contributions. (p. 382)

Only the overall set of transactions in which the agent engages as part of the corporate actor needs to be satisfactory to the agent, and only the overall contributions of the joint activity of the agents needs to be satisfactory for the corporate actor. I will call this a condition of "global viability": Only the global set of transactions in which each actor is engaged needs to benefit the actor. Because the structure of relations is a single complex structure, not composed of a set of independently-generated "spontaneous" relations, there is for each actor a single criterion for the whole structure. One can think of each actor as having "account balances."

Figure 4 shows the differences in the account balances necessary in a spontaneous or informal social organization consisting of relations among three actors and a formal organization consisting of a corporate actor and three agents. In a spontaneous or informal social organization (the top figure) six account balances are necessary for a system of three actors: Each of the three must have a positive account balance with each of the other two for the relations to continue. For the formal organization with three agents, only four account balances are necessary: Each of the agents (or employees) must have a positive account balance with the corporate actor, and the corporate actor must have "global viability," that is, a single positive account balance. Obviously, if the organization's size is larger, the disparity in account balances increases when compared to informal organization: In informal organization consisting of ten actors, 90 account balances are necessary; a formal organization with ten agents needs only 11 account balances.

Modes of Social Control

Perhaps the greatest difference between primordial social organization and constructed social

organization is the modes of social control they use. Constructed organization uses rules, laws, supervision, formal incentives, and sanctions by designated agents. The corporate actor, as the actor that establishes the structure, holds the right to make rules or laws and to specify the structure of supervision and the sanctions associated with rule violation. It is also in a position to provide positive incentives for performance.

In primordial social organization, these formal modes of social control are only a small part of the total. Most control comes from social norms, status, reputation, and moral force. Provision of positive incentives or negative sanctions is quite problematic, for one reason: Apart from the family head, who holds authority within the family, and counterparts at the clan or village level, no actor is in a position analogous to the corporate actor. Because each relation beyond the family is autonomous, no actor outside that relation has rights analogous to those of the corporate actor. Each has only rights to establish, break, or modify those relations in which he or she is directly engaged. Thus, social control in primordial social organization outside the family is problematic. Sanctions can be effective only when the sanctioner holds the *right* to sanction, a right recognized by the person being sanctioned, as well as by others. In constructed social organization, the policeman can arrest someone who has broken the law, and the supervisor in a firm can dock a worker's pay for violating company rules. These rights are delegated by the corporate body, which acquires them at the time of its formation. But in primordial social organization, such rights are born of informal social processes that depend on a dense and relatively closed social structure that has continuity over time. Closure and continuity provide a form of *social capital* on which the effectiveness of social norms depends. Throughout history, when primordial social organization was strong, it was so because the social capital which it depended was abundant: Informal consensus could generate norms, and rights could be allocated and enforced via that social capital.

The existence of norms, reputation, and status in informal social systems depends on two conditions being met: (1) that the actions of one or more actors in the system impose externalities (positive or negative) on others bringing about a common interest among those others to control the action; and (2) that there is sufficient social capital to allow appropriate collusion and sharing of the cost of sanctions (see Coleman 1990, chaps. 10–12). What has happened over time is that the second of these conditions is no longer being met. The social capital on which primordial social organization depended for social control has been eroded. The closure of social networks has been destroyed by the technological changes that have expanded social circles and erased the geographic constraints on social relations. The stability of these structures, on which social capital equally depends, has been destroyed by the same technological changes that allow mobility and facilitate the breaking of relations. "Communities" of adults do form, not around physical places, but around common interests. Yet because these communities encompass only one aspect of their members' lives, they lack, except in that one domain, the coercive power on which the effectiveness of norms, status, and reputation depend. For example, a sociologist may be constrained by the occupational community from violating its norms, whether these are norms against faked data or norms against research on forbidden topics. But

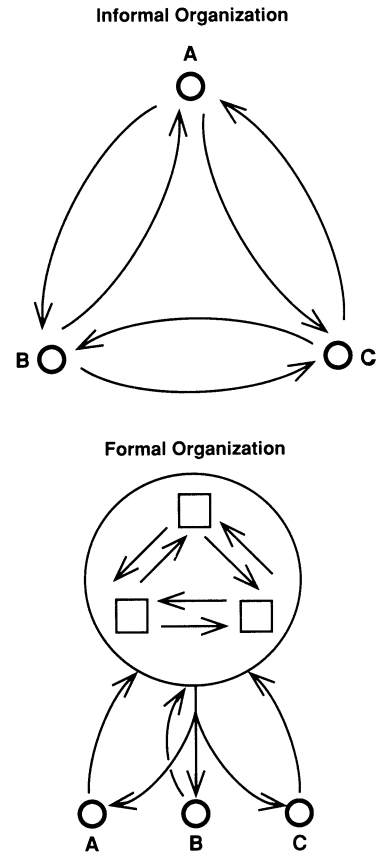

Figure 4. Account Balances Among Actors: Informal and Formal Organizations

the occupational community does not induce sociologists to be trustworthy in financial obligations, nor to be charitable toward others less fortunate, nor to raise their own children properly — nor does it provide the social capital that can help them raise their children.

As the social capital of primordial social organization vanishes, new entities provide social control — new entities that are part of constructed social organization. The new corporate actors I described earlier, not derived from the family, constitute formal organizations that impose and enforce the rules that constrain many of our actions; and a related invention, the nation state, imposes laws enforced by designated agents of the law — all this replaces the norms, reputation, status, and moral force imposed in earlier societies by the family, the community, and religious bodies.

THE CRITICAL MISTAKE

Yet we make a mistake, both in society and in sociology. The mistake is simple and correctable: We fail to recognize that the social capital on which primordial social organization depends is vanishing; we fail to recognize that societies of the future will be constructed, and that we should direct our attention to designing those social structures. We need not mourn the loss of the supports for the social controls of primordial social organization. As anyone who was raised in a small close community knows, normative systems have many unpleasant aspects: They operate more via constraints and coercion than via incentives and rewards. They are inegalitarian, giving those with most power in the community freedoms that are denied others. They discriminate, particularly against the young, enforcing norms that are in the interests of elders; they inhibit innovation and creativity; they bring a greyness to life that dampens hope and aspiration. All this is due to their origins: The rights on which they depend are generated through a process of consensus; the interests of different members of the community are weighed differently.

I said our mistake (not recognizing the continuing loss of social capital) is correctable. It is correctable in society through the explicit design of institutions, rather than the mere patching up of old ones. It is correctable in sociology by recognizing that our task is not merely to describe and analyze the functioning of society — not merely to understand, for example, how norms and status systems come into being and are maintained — but is a task of institutional design. I will illustrate what I mean.

Most commonly one finds attention to institutional design in those organizations constructed for a purpose, that is, formal organizations. In the example of the Austrian bank which attempted to eliminate personal relations among employees, the organization's designer saw personal relations as necessarily destructive to organizational goals. More sophisticated organizational design recognizes and incorporates these relations. One example is the creation of "Quality Circles" (QC) in Japanese firms; this structure was transplanted to the United States, resulting in plants organizing according to "Quality of Work Life" (QWL) principles.

One such plant was established in Alabama in the late 1970s by an automobile manufacturer.[3] The plant used assembly lines of about 10 people each to put together wiring harnesses for automobiles' electrical systems. On one occasion, a team of outside advisors visited the plant and met with the members of one line. The line constituted one QWL group, which met every Friday afternoon on company time to discuss problems and procedures. The group's activities, as described to the visitors, included making decisions about reorganizing the tasks on their line, and taking responsibility for and establishing authority over their joint activities — things that the foreman, nonexistent in this plant, does in traditionally organized plants. The group used collective pressure to keep members "in line." For example, the group reported making telephone calls to and buying an alarm clock for a member who was chronically late and who complained of being unable to get up in the morning. One member said wistfully of the QWL group, "It's the closest thing to a family I've got." This example involves, essentially, a reallocation of rights within the firms. Rights ordinarily in the hands of a foreman were reallocated to the assembly line as a group.

Another example illustrates a different kind of rights allocation leading to informal social control (see Mackie 1991). The U.S. Forest Service contracts with private firms to plant trees in areas that have been clear-cut or burned. The firms are paid according to the number of acres planted; payment is adjusted for quantity and quality of planting. In typical economic analysis, an effi-

[3] This example is taken from notes made by the author on a 1980 visit to this plant while a member of the General Motors Science Advisory Committee.

cient outcome for the firm would occur if the firm were able without cost to monitor the quantity and quality of each agent's output, and if each agent were paid individual piece rate for quantity and quality (using the same formula used by the Forest Service to pay the firm). However, as an economist would recognize, observing individual quantity, and especially quality, is costly; and as a sociologist would recognize, such an analysis ignores the possible informal rewards that can emerge in a group.

One firm, a cooperative, organized in the following way: It divided its agents into teams and paid each team in proportion to the payment it received from the Forest Service. An important element of the structure is that the team had the right to divide the payment in whatever way the members agreed upon. An analysis of the teams' functioning showed that three actions leading to informal social control were typically used (Mackie 1991). (1) Each agent was paid according to the quantity of trees planted. (2) The quality of planting was monitored. The team of agents was strung out along the hillside, and each agent, in addition to his own planting, monitored the agent to his left and to his right. As a result, each agent, except the two at the uphill and downhill ends, had two monitors; the agents at each end one. (3) Reputation, status, gossip, and rebuke came into play within the group, acting to maintain quantity and quality, and perhaps to provide additional incentives through competition to gain status. The firm experimented with team size, because there were economies of scale. It found that the informal social organization was less effective for groups much larger than size 12, so the equilibrium organization of the firm consisted of 12-person work teams.

In some institutional areas primordial social organization is no longer effective, but appropriately constructed social organization has not yet come into being. Perhaps the most prominent of these is child rearing. As the strength of the family has declined and many of its functions have moved outside the household, child rearing has moved increasingly out of the household as well. Constructed social organization, in the form of the school, the nursery school, and the daycare center have taken over many components of child rearing. Thus these child rearing institutions are not merely a supplement to the family, as they once were, but are primary child rearing institutions.

If we make that conceptual change — as we must, given the rapid disintegration of the family — then the term most used by architects, design becomes relevant, and terms most used by economists, *maximization* and *optimization*, become relevant as well:[4] In thinking seriously about educational institutions as being constructed, the idea of *designing* the institution to *maximize* the child's value to society becomes appropriate.[5] Sociologists have not characteristically approached matters in this way, but research exists that begins to do so. This research typically asks, not about the content of what is taught in school, nor about teaching methods, but about the social organization of schooling, always directed to increasing levels of achievement. For example, Slavin (1983) has carried out extensive experimentation with *cooperative learning*, a social reorganization of the classroom now widely used in schools. Gamoran (1992), as well as others, has examined the effects of ability grouping on school achievement. Probably neither Slavin nor Gamoran would describe their research as a step in the optimal design of schooling, but this is what they are about. The matter is, of course, complicated by the fact that what is optimal for one child is not optimal for another. This is a complication, but one that should not obscure the nature of institutional design.

Note that in these examples, the task of optimization in organizational design involves not only the formal incentives provided by the organization (e.g., wages or grades), but also the *informal* incentives generated by the formal structure. That is, in organizational design, whether of a school, a laboratory, or a factory, the incentive structure faced by each individual is not merely the set of formal incentives (wages or grades), but also include the informal incentives that the formal structure generates. Although some man-

[4] Economists and demographers have looked, as I do here, at having and raising children as actions motivated by expected costs and benefits. Most of this work, however, has taken fertility as the action of interest, not the way that children are raised. Becker (1991, chap. 5) has treated these matters extensively. For a review of the literature in this area up to 1975, see Cochrane (1975).

[5] To "maximize the child's value to society" rather than to maximize the child's own welfare appears to sacrifice the child's welfare to that of society. But as trustees for the child, adults find it easy to serve their own ends under the umbrella of "what's best for the child." To maximize the child's value to society is both a much less easily manipulable goal and one that the adult society has a direct incentive to implement correctly.

agers in organizations and some teachers in schools are unaware of this distinction between formal and informal incentives, sociologists since the Hawthorne studies of Roethlisberger and Dickson (1939) have recognized this. The natural process of spontaneous social organization, with its informal relations, social norms, and status systems, does not die as the primordial institutions of family and church are replaced by constructed organization: The process reasserts itself wherever there is sufficient closure and continuity to provide the social capital that sustains it. In modern society, this occurs primarily within the constructed organization. Informal incentives can be very powerful, as various sociologists, including Blau (1955) and Crozier (1964), and the effectiveness of Quality Circles in Japanese manufacturing firms have shown. This of course makes the problem of optimal organizational design both more interesting and more difficult.

If we expand horizons however, we can recognize that "schools" as we know them are optimizing on a subtask that once — when they were merely adjuncts to the family — constituted their total task. Raising a child to be of value to society entails a much richer mix of goals than schools characteristically address. These goals include managing one's own affairs, taking responsibility for others, working in coordination toward collective goals, in brief, all the things entailed in becoming a mature adult. Parents in broken and patched-together families are becoming increasingly incapable of accomplishing these broader goals for their children, and the schools are not well designed to take on these goals.

Let us go back for a moment to an earlier period. Before the Industrial Revolution, parents held effective property rights over a portion of their children's productive activity. So long as the children were within the parents' household, the children's production was the property of the household. When the parents, in old age, became unproductive and economically dependent they had a right to a portion of the children's assets. Children had a corresponding obligation enforced by norms in the extended family and the community, to provide support for their parents. Caldwell (1976) describes pre-industrial societies in much this way, as societies in which the flow of wealth is from young to old. In industrial societies, the flow, Caldwell argues, is reversed, from old to young.

In some societies, the obligations toward parents fell on particular children: Still today in Japan the son has the obligation to provide for his parents in old age. As Brinton (1992) points out, this creates a strong incentive for parents to get the best education and training possible for their sons; but a much less strong incentive to educate their daughters'.

However, apart from minor and perhaps transitory exceptions, matters have changed. The flow of wealth is no longer from young to old. With the advent of pension funds and government old-age assistance, the parents' need for their children to care for them as they become dependent has been greatly reduced. As the family disintegrates, carrying the family's honor into the future is less important. One result of these changes is sharply reduced incentives for parents to bring up their children to be productive.[6] There is no reason to expect parents to be motivated to bring up their child to maximize the child's value to society.[7]

This certainly corresponds to what we observe in children of the 1990s: Schools themselves, to which parents relegate their children, are poor substitutes for the intensive training sufficiently motivated parents, could give or could arrange to have given. Further, as children grow into adolescence, in many families they are abandoned psychologically and socially. Because they constitute problems and because the adult members of the family have their own problems of social survival, many parents are eager to be rid of their

[6] Demographic transition theory sees the transition from a fertility regime of many children per couple to few children per couple as a direct result of this change in incentive. The shift in fertility is seen as a rational response to a reversal in direction of the flow of wealth, from a young-to-old flow before the transition, to an old-to-young (primarily parent-to-child) flow after the transition. The reversal of flow, in turn, is seen to be the result of the shrinking of extended family obligations, and emergence of the nuclear family (Caldwell 1976).

[7] The careful reader will see that behind this statement is the assumption that moral values, which compel persons to attend to another's well-being, are weak forces unless reinforced by self-interest. When primordial institutions were strong, the supports and sanctions from family and community, as well as the property rights in children's productivity, sometimes ensured that self interest would reinforce moral values in raising children. Sometimes, as when family needs led to exploitation of children's labor, self-interest was opposed to (and overrode) moral values. As the primordial institutions fade, the old structures that led self-interest to reinforce moral values are fading as well. If they are to be replaced, it must be as part of purposively constructed institutions.

adolescent children. In lower socioeconomic groups, this lack of interest in the child's value to society is manifested in inattention, in "letting the child run wild," or in explicit abandonment. In higher socioeconomic groups, the lack of interest is better disguised, but it is there: The pressures of the demanding mother of earlier generations are replaced by an ethic of "letting the child find her own way," or "letting him do his own thing." The result in lower socioeconomic groups is youth in trouble with crime and delinquency. In higher socioeconomic groups, the result is at best young people floundering to "find themselves," as if there were some hidden "self" which, once found, would provide a direction and momentum for life.

There is, however, one actor with strong interests in maximizing a child's value to society , or minimizing its cost. This is the state. The costs of undeveloped human capital (and conversely the benefits of its development) accrue to governments: costs of schooling; costs of crime (including the cost of apprehending and incarcerating criminals); costs of welfare payments; medical costs induced by lifestyles; costs associated with alcohol and drug use; and finally, on the other side of the ledger, benefits from income taxes. Government would gain by vesting rights to a portion of the realized benefits and to a portion of the unrealized costs to any actor who would work to increase the benefits and reduce the costs for particular children. This would necessitate use of social science methods to make a statistical prediction, on the basis of background characteristics, of the expected costs and benefits to government of a given child. The difference between this prediction for a given child and whatever improvement is made would be, in effect, a "bounty" on the head of each child in the system.

The costs, benefits, and potential bounties, can be easily seen in the case of children who are currently wards of the state, raised in state institutions, or farmed out to private institutions under contract to the state, or to foster homes which are paid a monthly fee for keeping them. Currently, these institutions or foster parents have an incentive to provide only custodial care for the child, sufficient to keep the child from causing them trouble. There are two problems with this arrangement. First, the custodians have no incentive to increase the child's value to society, but only to keep him or her out of trouble while in their care. Second, some children (especially noninfant boys) are very difficult to place. The monthly payment for custodial care is not worth the trials and tribulations these "difficult" children can bring.

The solution that overcomes both these problems is straightforward. There are, one might say, potentially great gains from trade. Payments to caretakers should differ, so that "difficult" children are no longer cast aside. And the payments should depend on just what costs and benefits the child brings to the state both during the period of foster care and in the future. This implies that some contingent payments, depending on the child's costs and benefits to the state relative to what was predicted for that child, continue beyond the period of foster care. The potential of these payments, this "bounty," can give an incentive to foster parents or other caretakers to maximize the child's value to the state.[8]

It is, of course, a large step to go beyond this structure, to offering bounties for children who are not wards of the state but of their parents. Yet with some care not to introduce perverse incentives, the step can be taken. The bounty, or potential for payment, would be initially held by parents, restoring to them, in effect, property rights over a portion of their children's productivity. These rights, this bounty, would be marketable by parents to whatever actor undertook to take responsibility for developing the child in a way that would reduce the costs and increase the benefits to the state. Because the costs and benefits occur over the lifetime of the child, the return on the investment made by the responsible actor would accrue to that actor as the young person passed the age at which the costs and benefits would be expected to occur. This new property right would be something like a school voucher, but would differ in three ways: First, the voucher would be redeemable not merely by a "school," but by parents themselves or by any party who contracted with parents to take responsibility for

[8] A poignant case that illustrates both the errors of the current arrangements and the loss of primordial institutions was reported recently in the *Chicago Tribune* (McRoberts 1992). The article described the childhood history of a Chicago Park District recreation supervisor (now in his 40s) who is regarded as an outstanding model. Abandoned as an infant and a ward of the state, he was in and out of 32 foster homes. He was a gang member, arrested 60 times during that period. He reports that he was "rescued" by two nuns in a teen center that he and his gang had planned to destroy. Both nuns have now left the order and are married. It is safe to say that their place has not been filled by counterparts in this generation — religious orders for both men and women are on the wane.

the child's development. Second, the voucher would cover not merely the traditional goals of schooling, but all those personal attributes that make a person valuable to society. This suggests much greater change in the child's environment than that provided by an 8 A.M. to 3 P.M. school day. Finally, and most important, it would be a contingent voucher, with a value dependent, not on standardized test scores or any other indirect measurement, but directly on the reduction in costs (or the increase in benefits) to the state for that child compared to the predicted future for that child. The incentive would be stronger for the "difficult" child than for the average child, because the potential gains to the state would be greater. It would be at least as strong for bringing a child from a prospective future of crime and drugs to self-sufficiency as it would be for bringing a child from a prospective middle income to a higher income. This would give concrete incentives to accompany the advertising slogan: "A mind is a terrible thing to waste."

Notice that such a proposal does not engage directly in designing social organization to optimize a child's value to society. Implicit in this proposal is the idea that what is optimal differs from child to child and can only be assessed by someone in direct and extended contact with the child. In this, the proposal even comes close to being inimical to the idea of a "school," which must treat many children similarly.

CONCLUSION

Now, I bring attention back to my central argument. I suggest, quite simply, that modern societies are in the midst of a transformation in their very basis of organization. Brought on over the past two centuries, this is a change away from social organization derivative from the family and related primordial institutions, such as religious bodies. I have labeled this "primordial" social organization, because of its foundation in the process of birth and the associated kinship relations. The change is toward organization based on corporate actors that are characteristically detached from persons. These corporate actors, best exemplified by the modern corporation and captured in social theory under the rubric of formal organizations, have positions rather than persons as elements of their structures — persons merely occupy positions.

This transformation is implicit in the four changes in society and sociology I described in Table 1, and encompasses those changes. It may be labeled the *rational reconstruction of society.* It was heralded by Gierke ([1900] 1968) in Germany and Maitland (1898) in England in their analyses of the emergence of a new form of corporate actor in society. It was signaled by Weber, in his preoccupation with the rationalization of society. It is now upon us in full force.

This transformation, quite irreversible, offers both dangers and opportunities. The dangers are illustrated by the vacuum in child rearing I have described. The opportunities lie in a future in which social control no longer depends principally on coercion, constraint, and negative sanctions, under the oppressive blanket of closed communities, but instead depends principally on positive incentives and rewards for performance.

What does this transformation mean for sociology and sociologists? It implies a future in the design of organizations, institutions, and social environments — design intended to optimize relevant outcomes. It does not mean that the wisdom of the past masters of social theory should be neglected, nor that the knowledge gained from social research, or the insights about social organization arrived at through the study of social history should be ignored. It does mean that the ultimate justification of all these endeavors will be their contribution to optimal design of the constructed social organization of the future. This involves, of course, social theory — but social theory directed to this task, not to chronicling and conceptualizing the changes of the past. It also involves a great deal of social policy research. It involves training sociologists, both undergraduates and graduates, to be the architects and architectural aides in the design of social institutions. It implies an overhaul of the curriculum in sociology, with a new core focused on institutional design and the attendant policy research it requires.

The construction of society will go on, with or without sociologists, as the institutions of primordial social organization crumble. It is the task of sociologists to aid in that construction, to bring to it the understanding of social processes, to ensure that this reconstruction of society is not naive, but sophisticated, to ensure, one might say, that it is indeed a rational reconstruction of society.

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