

James S. Coleman

# THE SOCIOLOGY OF JAMES S. COLEMAN<sup>1</sup>

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**Key Words** education, mathematical sociology, rational choice theory, social capital, social networks

■ **Abstract** This chapter surveys the career and scholarship of James S. Coleman. It tracks scholarly usage of his work, with attention to references after 1995 and the subject areas in which its use is concentrated. At base a scholar of problems in social organization, Coleman made influential contributions that range across the sociology of education, policy research, mathematical sociology, network/structural analysis, and sociological theory. Works from several phases of Coleman's career are cited widely by scholars in sociology, education, economics, business/management, and other social science fields; during the past decade his conceptual work on social capital has been most influential. Coleman's widely debated *Foundations of Social Theory* is receiving increasing attention and has helped to establish a stable if limited niche for rational choice analysis within sociology.

## INTRODUCTION

For 40 years—between receiving his PhD at Columbia University in 1955 and his death in 1995—James S. Coleman was a prominent, prolific, and controversial figure in American sociology. The amount and breadth of his academic work make it difficult to classify Coleman into a conventional sociologist's role (Sørensen & Spilerman 1993, Clark 1996, Fararo 1997, Lindenberg 2000). His work encompassed theory, substantive research, modeling, methodology, and policy research—often two or more of these simultaneously.

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<sup>1</sup>Since 1986, the *Annual Review of Sociology* has featured invited chapters by distinguished senior sociologists. James S. Coleman's death came before he could accept the *Review*'s invitation to author one, though his late-career (1994a) essay "A Vision for Sociology" forthrightly sets out his views about the desirable course for the discipline. I was pleased to be asked to recount Coleman's major contributions to social science and assay their contemporary influence. In keeping with the mission of the *Review*, I have attempted to highlight Coleman's many important writings, to track their influence (emphasizing the past decade), and to offer selected illustrations of scholarship that has drawn on or advanced his work.

At base, however, Coleman was a student and scholar of problems in social organization. Throughout his career, he saw understanding the functioning of social systems as the central problem for sociology. It was his conviction that social science and social theory should contribute to the development of improved social organization, with a system's responsiveness to the interests of persons as his normative standard of performance.

After a biographical sketch, this chapter surveys Coleman's work, beginning with the primarily substantive studies of social organization that he conducted as a graduate student and shortly afterwards. It then turns to his extensive research on education. Next I cover Coleman's writing on mathematical sociology and methodology. The final section is about the theoretical work that he regarded as his most important, on purposive action, rational choice, and corporate actors. I use the *Social Sciences Citation Index* (SSCI; Institute for Scientific Information 2004) to track the usage of Coleman's scholarship, with special attention to references after 1995 and the subject areas in which use of his work is concentrated.<sup>2</sup> I selectively call attention to recent studies that draw on Coleman's writings.

## BIOGRAPHICAL SKETCH

Coleman's only published autobiographical statement (1990a) focuses on his graduate student life at Columbia between 1951 and 1955. Other information appears in reflections on his educational research (Coleman 1991), an interview conducted by Swedberg (1990), and correspondence with Clark (1996). Merton (1996) offers the perspective of one of Coleman's graduate teachers.

Born in 1926, Coleman was raised in the southern and midwestern United States, receiving his high school diploma from Dupont Manual High School in Louisville, Kentucky. He attended three undergraduate institutions, earning a degree in chemical engineering from Purdue University in 1949. Subsequently, Coleman took some evening courses in social psychology while he worked as a chemist. Unsatisfied with his work and intrigued by the social sciences, he enrolled in the Columbia graduate program in sociology.

At Columbia, Coleman studied primarily with Paul Lazarsfeld, Robert Merton, and Seymour Martin Lipset. He credited Merton for conveying theoretical inspiration and a vision of sociology as a calling, Lazarsfeld for orienting him toward mathematical sociology, and Lipset for teaching him about the integration of macrosocial questions and quantitative methods (Coleman 1990a, pp. 92–95).

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<sup>2</sup>I conducted cited reference searches during early November 2004 on many of Coleman's major works, allowing for variants and typographical errors in titles and one-year errors in dates. Counts are based on citations to both "JS Coleman" and "J Coleman." I used the "Analyze" feature of the cited reference search to tabulate time trends and subject field distributions for the citations located. Subject field distributions are based on field codes assigned by the SSCI.

As part of a student group known as the “Young Turks,” Coleman was actively involved in projects at the Bureau of Applied Social Research. He reported having difficulty with his oral qualifying examination and that he received no job offers the year he completed his PhD.

Coleman spent a postdoctoral year at the Center for Advanced Study in the Behavioral Sciences before beginning an assistant professorship at the University of Chicago in 1956. He was recruited to help establish a Department of Social Relations at Johns Hopkins University in 1959. He remained there until 1973, returning to Chicago for the remainder of his career. Among his many honors were membership in the U.S. National Academy of Sciences, the presidency of the American Sociological Association (ASA) in 1991–1992, and at least ten honorary degrees.

## EARLY CAREER SUBSTANTIVE STUDIES

Coleman’s early career was an unusually productive period during which he developed several major substantive studies as well as his first wave of work on mathematical sociology. About a decade after his doctorate, he wrote (1964c, p. 184) that he was principally interested in the relationship of individual to society, and in how social order and individual freedom could be balanced. This is in keeping with his self-description as a Durkheimian during this period (1990a, p. 93).

## Pluralism in Organizations and Communities

For Coleman, the existence of multiple centers of power and avenues of status attainment were central ingredients in maintaining the freedom-order balance. Coleman’s interest in such questions is reflected in his 1955 dissertation (“Political Cleavage within the International Typographical Union”), which is part of *Union Democracy (UD)* (Lipset et al. 1956). *UD* attributes democracy in the union to a confluence of historical and social structural factors, including local autonomy, the existence of independent power bases such as secret societies, and the occupational community among printers. Legitimate competition is an important condition that helps to keep the organization attentive to member concerns.

Pluralism is also a significant theme of Coleman’s short monograph *Community Conflict* (1957), which reviews case studies of disputes over such questions as fluoridation, civil liberties, and school desegregation, abstracting patterns in their initiation and development. Among social structural conditions he linked to the course of conflict are the existence of a stable two-party system, cross-cutting social ties of participants across issues and factions, and organizational density.

Coleman’s interest in pluralistic arrangements and his concern that power concentration compromises the performance of a social system are seen in many of his subsequent writings. They are evident, for example, in his advocacy of pluralism in educational systems (Coleman 1992a, Moynihan 1993), research design (Coleman et al. 1982, p. 222), and policy research in general (Coleman 1980).

## Medical Innovation

*Medical Innovation, A Diffusion Study (MI)* (Coleman et al. 1966b) was published in the mid-1960s, but many findings appeared earlier in articles (e.g., Coleman et al. 1959). Primarily concerned with factors influencing the timing of a physician's decision to adopt a new drug, *MI* is known for its attention to multiple sources of information—both formal media and interpersonal contacts. It found that drug adoption processes differed between physicians well integrated into local social networks and those in peripheral or isolated positions.

A recent review calls *MI* a “classic example” of a diffusion analysis involving media exposure and network interactions (Wejnert 2002, p. 317). Several studies use contemporary network models in secondary analyses of the *MI* data, beginning with Burt's (1987) assertion that a process of role taking rather than socialization of proximate others governs interpersonal similarities in adoption. A recent reanalysis (Van den Bulte & Lilien 2001) contends that apparent contagion patterns proxy marketing efforts by drug companies.

*MI* has attracted steady attention from scholars, as much today as it did immediately after its publication. The *SSCI* records more citations to *MI* since 1995 (147) than between 1966 and 1976 (139). This likely reflects rising interest in the study of diffusion in such fields as globalization, organizational analysis, and network analysis (Wejnert 2002). Subject fields that give extensive attention to *MI* include sociology, health and public health, and business/management.

## EDUCATION AND SOCIAL POLICY

Coleman's empirical research after Columbia concentrated on education.<sup>3</sup> Many of his key writings on it are collected in Coleman (1990b). Ravitch (1993) chronicles the three “Coleman Reports” that profoundly influenced U.S. debates surrounding educational policy; Heckman & Neal (1996) offer an overview and commentary on this work.

Coleman's (1991) account of how he became involved in educational research contains an element of serendipity. A late graduate school dinner conversation contrasting high school experiences evidently stimulated him toward research for *The Adolescent Society (AS)* (Coleman 1961b). He opted to study schools less out of intrinsic interest than because they were relatively closed social systems in which he might pursue his interest in the sources of status pluralism (1964c, p. 187).

The introduction to *AS* nonetheless discloses that Coleman had a long-standing concern with improving the functioning of high schools (Coleman 1961b, p. vii). That he thought there was room for improvement is also evident in his

<sup>3</sup>The main exception is an early 1970s line of work on mobility and labor force entry (e.g., Coleman et al. 1972).

autobiographical comments, in which Coleman observes that an assignment from Lazarsfeld early in graduate school was “the first time ever in the educational system [he] felt that someone had given [him] a responsible task to do” (1990a, p. 85) and that he “came to Columbia resolving to give the educational system one last chance” (p. 97).

### *The Adolescent Society*

AS (1961b), Coleman’s first educational study, examines structures and status systems in the student bodies of ten midwestern U.S. high schools. He writes (1964c, p. 202) that AS departed from his plan to study status pluralism. He judged that the study’s more important findings bore on the character, sources, and consequences of adolescent cultures and social structures. AS focuses on the value climates, role systems, and sociometric structures of the schools, giving special attention to the elites or “leading crowds” of students. These varied somewhat across schools, but in general social and athletic success were more valued than academic pursuits. Coleman concluded that “the adolescent subcultures in these schools exert a rather strong deterrent to academic achievement” (1961b, p. 265).

AS gives much attention to macro-micro problems, assessing the psychological and scholastic effects of adolescent status systems on students. Toward its end, however, Coleman asks about the sources of adolescent value systems, settling responsibility on the adults in charge of educational organization and policy. Coleman sounds themes that recur often in his later work: that social relations increasingly involve interactions with institutions rather than with other persons (1961b, p. 328); that schools must engage adolescents actively and collectively rather than passively and individually (pp. 315–19); and that restructuring would strengthen secondary education (p. 329).

Heckman & Neal (1996) discern roots of Coleman’s later rational choice orientation in AS, which devotes much attention to how students respond to formal and informal incentive systems. Coleman (1959) draws parallels between the student culture’s discouragement of academic effort and output-restriction norms in work groups, asserting that “the response of the group is purely rational” (p. 345).

Coleman followed up on the concerns in AS with youth development in a continuing strand of work on socialization and the transition to adulthood (e.g., Coleman et al. 1974). Husén (1996, p. 23) terms AS “a seminal work on youth culture” and observes that Coleman’s sociological analysis of adolescence—stressing the changing organization of family and work, as well as shifts in responsibility for socialization to extra-familial institutions—complements psychological perspectives. Kandel (1996) contends that AS overemphasized school and peer influences on socialization, and that Coleman later grew more attentive to family factors.

Kandel (1996, p. 36) highlights the long-standing influence of AS on scholarship, presenting citation trends through 1993. This influence continues since Kandel wrote. The *SSCI* records about 25 citations per year to AS since 1993. It is used primarily in sociology, education, and developmental psychology. Recent

studies of resistance to learning (McFarland 2001), oppositional cultures in education (Ainsworth-Darnell & Downey 1998, Farkas et al. 2002), the role of cultural capital in educational success (Dumais 2002, Kaufman & Gabler 2004), and adolescent relationships (Giordano 2003) reference AS.

### *Equality of Educational Opportunity*

Coleman entered public policy debates abruptly with *Equality of Educational Opportunity* (*EEO*) (Coleman et al. 1966a). Mandated by the U.S. Civil Rights Act of 1964, the *EEO* project spanned only 16 months from initiation to publication. Although it is widely known as “The Coleman Report,” Coleman often reminded others of its multiple authorship.

At the time, educational opportunity was typically assessed by measuring “inputs” such as facilities, textbooks and other equipment, or teacher salaries and qualifications. *EEO* examined rural/urban, regional, and race/ethnic differences in inputs, finding differences in resources to be generally fewer and smaller than anticipated, and greater by region than by race/ethnicity. Importantly, *EEO* also focused attention on outcomes of education (assessed primarily via test scores) and on the relationship between inputs and outputs, drawing on a massive national survey of thousands of schools and over 600,000 students. Sharp race/ethnic differences in achievement were evident. Analyses pointed to family background as the principal source of achievement differences, followed by characteristics of a student’s peers and teacher characteristics. School characteristics, including per capita expenditures, appeared weakly related to achievement. These findings stimulated controversy, debate, and much reanalysis. Coleman (1969) observed that the peer characteristics finding implied that school integration would raise achievement among blacks, and *EEO* was widely invoked in support of integration (Ravitch 1993).

Heckman & Neal (1996, p. 84) describe *EEO* as a “watershed in social science research” by virtue of its scale and policy impact. Nearly four decades after publication, *EEO* is still cited roughly 50 times per year, mostly in education, sociology, and economics. Blau (1996, p. 4) describes *EEO* as “an influential study that spawned a voluminous literature,” observing that three decades of research have generally supported its conclusions. Heckman & Neal (1996) concur in this assessment, notably excepting the peer effects finding. Moynihan (1993, p. 124) credits *EEO*’s stress on educational outputs for establishing a new standard of accountability. One recent manifestation of this emphasis is state-level performance testing (Muller & Schiller 2000).

For his part, Coleman (1991) referred to *EEO* as a “detour,” presumably because it gave comparatively little attention to the internal functioning of schools as social systems. Be that as it may, it is hard to overstate *EEO*’s influence on the subsequent social science research agenda on education. Vigorous debates continue over the extent to which school resources influence both test scores and post-educational outcomes (Hanushek 1996, Card & Krueger 1999) and over the presence of peer

effects (e.g., Cheng & Starks 2002, Hanushek et al. 2003). *EEO* remains a central reference point for studies of black-white differences in educational attainment (Gamoran 2001, Hallinan 2001).

## Games and Experiential Learning

Toward the end of the *AS* research, Coleman developed an interest in simulation games, for two distinct reasons. First, he saw games as educational innovations that could better engage the attention of students and permit separation of the “instructor” and “judge” aspects of a teacher’s role (Boocock & Coleman 1966). He wrote about differences between “information assimilation” and “experiential” approaches to learning, contending that the experiential mode makes a more immediate linkage between information and action (Coleman 1976). Second, Coleman regarded games as tools similar to experiments for studying social systems. Constructing rules amounted to developing a theory of a given system’s operations; observing the play of the game offered some evidence as to the plausibility of the theory (Coleman 1989).

Boocock (1996) reflects on the Hopkins Games Project, noting that “it would be hard to argue that simulation gaming is in the mainstream, educationally or sociologically” (p. 143). Although sociologists occasionally use such devices (Podolny 1990, Feld 1997b), this strand of Coleman’s work has only a slight influence on contemporary scholarship. Coleman, however, saw the games project as pivotal in his intellectual development (Clark 1996, pp. 5, 7; Heckman & Neal 1996, p. 99), serving to crystallize his interest in rational choice theory.

## School Desegregation and “White Flight”

Perhaps Coleman’s most controversial work on education found that mandatory school desegregation plans tended to accelerate residential moves by whites away from central cities, thereby contributing to resegregation. Presented in Coleman et al. (1976), it found that increases in between-district segregation due to residential movements countered within-district declines in segregation due to government policy. The research concluded that court-ordered desegregation was not an effective instrument of social policy; Ravitch (1993) reviews the often-heated disputes that ensued.

By comparison with *EEO* and Coleman’s later work on public and private schools, this work received modest attention from subsequent scholars, concentrated largely in the decade after its publication. However, as noted by Heckman & Neal (1996, pp. 91, 98), it displays a well-developed rational choice orientation on Coleman’s part. Reflecting on this research, Coleman (1981b, p. 189) coined what he termed “Schultze’s Law” about unintended consequences of social policies: “If a social policy does not actively employ the interests of those on whom it has an impact, it will find those interests actively employed in directions that defeat its goals.”



## Public and Private Schools, Families, and Educational Outcomes

The 1966 *EEO* report was widely regarded as demonstrating that schools have few effects on academic achievement, although many regard this as a misreading (e.g., Alexander 1997). In any case, as noted by Ravitch (1993) and Sørensen (1996), both AS and Coleman's late-career project on public and private schools conclude that features of social structure within and around schools do shape educational outcomes. Coleman et al. (1982) and Coleman & Hoffer (1987) present major findings from the public-private project, the earlier work using cross-sectional data, and the later one drawing on panel data. Both books assess differences between public, Catholic, and other private schools in academic achievement and sociodemographic composition of several kinds. Coleman & Hoffer (1987) examine a wider range of outcomes extending beyond high school and probe more deeply into the sources of differences between educational sectors.

This work concludes that sectoral segregation by race and income was less than anticipated, and that academic achievement in several subjects was higher in private than in public schools. Hoffer et al. (1985) report greater growth in verbal and mathematics achievement in Catholic than in public schools, especially among students from less advantaged backgrounds. Catholic schools had especially low dropout rates. These differences were attributed to varying academic demands (homework and academic coursework) and different disciplinary climates. Also implicated were differences in school environments. The authors point to the existence of "functional communities" around Catholic schools, involving intergenerational closure and social density among parents. These were said to supply sanctions and monitoring in support of proachievement norms. Coleman first used the concept of "social capital" in this context (Coleman & Hoffer 1987).

Hoffer et al. (1985, p. 96) suggested that "a little competition might not be harmful for American public schools," an inference that was widely contested and debated; again, see Ravitch (1993) or Heckman & Neal (1996). Especially controversial was Coleman's support for policies to expand school choice via such means as vouchers or tuition tax credits. Many critiques focused on selectivity—both in parental/student decisions to enroll in private schools and in the discretion of private schools to exclude students—as an explanation for sectoral differences, observing that distinct policy implications follow from these varying accounts for sectoral differences in achievement.

Issues raised by Coleman's public-private schools work remain active. The *SSCI* records about 20 references per year to each of its two reports since 1995, primarily within the fields of education, sociology, and economics. Highly germane to debates over school choice, they are acknowledged in such recent articles as Neal's (2002) discussion of educational voucher plans and Arum's (1996) argument that private school competition heightens achievement among public school students by increasing public school resources rather than efficiency. Other relevant research includes Neal's (1997) finding that the benefits of Catholic schools are especially large for urban minorities, and Lee et al.'s (1998) report indicating that Catholic

school students take more advanced mathematics courses and that ability-related differences in such course-taking are smaller in Catholic schools. Morgan (2001) examines sectoral differences in achievement using propensity-score matching methods, suggesting that the Catholic school effect may be greatest among the students least apt to attend such schools.

Several investigations have examined the claim that functional communities promote better educational outcomes, with special attention to intergenerational closure. Morgan & Sørensen (1999) find that mathematics achievement gains rise with closure among students, but fall with closure among parents. Their data suggest, however, that parental closure may raise achievement in Catholic schools. They highlight potential drawbacks of parental closure, and they conjecture that these liabilities outweigh the benefits except in the presence of strong norms. Carbonaro (1998) reports that parental closure is associated with greater mathematics achievement but that the association vanishes after prior achievement level is controlled. He also finds an inverse relation between parental closure and dropout rates. Dijkstra et al. (2004) examine deviant behavior as well as academic achievement using several indicators of closure; they find strong student-teacher relationships to be most beneficial, but characterize their results as “disappointing” for the functional community hypothesis.

Kandel (1996) observes that Coleman’s theorizing about functional communities as sources of social capital led him to emphasize the role of families in youth development in his later work, linking it to a major finding of *EEO*. Coleman wrote extensively (e.g., Coleman 1994b) about structural transformations that alter families and change the nature of familial interests in children; he argued for innovations that would increase the resources of families or other actors interested in children. He contended that resources shaping the attitudes, effort, and self-conception of children were in especially short supply (Coleman 1987). His interest in school choice as one parental option for influencing a child’s education also continued. Schneider et al. (1996) note that sufficiently resourceful parents already choose schools via residential mobility or school sector, and examine parental propensities toward choice within public school systems, finding that when available, choice among public schools is most often exercised by disadvantaged minorities.

## Discussion

Several authors comment on linkages between Coleman’s educational research and other branches of his scholarship. Sørensen (1996) focuses on Coleman’s mathematical sociology, observing that Coleman did not specify explicit process models in his educational studies. Heckman & Neal (1996, p. 100) likewise note “his fairly casual use of empirical evidence and his failure to use formal social science frameworks.” Characterizing Coleman as a “true empiricist,” they account for this by observing that, when he conducted the research, strong *a priori* models were lacking, that he wished to reach a broad audience, and that he accorded priority—as in his work on *UD* with Lipset—to substantive explanations over formal techniques. Mayer (1997), too, concludes that empirical findings drove

Coleman's development of theory here. Heckman & Neal (1996) also consider the links between the "education" and "rational choice" Colemans, perceiving a rational choice orientation from AS forward, but conveying Coleman's view that "no simple account of his evolution as a social scientist can be told" (p. 96).

## Social Policy Research

The policy debates and controversies surrounding his educational studies led Coleman to reflect on the development of policy research as a new genre of social science (see, e.g., Coleman 1978). He argued that contemporary social theory ought to provide an account for the role of social science in influencing society as part of a "rational reconstruction of society" (Coleman 1993b). Characterizing policy research as social science providing information about current or prospective policy initiatives, he contrasted it with exposés of social problems and basic disciplinary research. A vitally important consideration for him was that sponsors interested in its outcomes, rather than investigators, set agendas for policy research.

Coleman was highly concerned that sponsors of policy research would exercise undue control over research questions, research design, or the dissemination of findings, especially because research results often serve to empower opponents of a policy initiative by providing a factual basis for opposition. He advocated (e.g., Coleman 1980) a model of "pluralistic policy research" that engages a broad range of interested parties in the formulation of projects and review of research. Observing that specialist research organizations are better able than universities to manage the scale and schedule required of policy research, he nonetheless saw the autonomy of university-based researchers as an important assurance against the suppression of results by sponsors (Coleman 1982a).

Bulmer (1996) and Kilgore (1996) cover Coleman's writings about policy research in greater depth; Kilgore gives special attention to Coleman's pluralistic model. Focusing on sociological practice in Belgium, Van Hove (1993) observes that policy makers often call on consultant companies rather than university-based researchers for information. Van Hove also gives examples of centers and thematic research programs that incorporate pluralistic elements.

## MATHEMATICAL SOCIOLOGY AND METHODS

Coleman brought substantial mathematical knowledge to sociology from his studies in chemistry and physics. He was drawn to mathematical applications for studying process rather than developing statistical indexes/methods or representing social structures. His very first published work (Coleman 1954) was an expository analysis of some mathematical social process theories. Among Coleman's major books on mathematical sociology are *Introduction to Mathematical Sociology* (IMS; 1964b) and *The Mathematics of Collective Action* (MCA; 1973). Fararo (1997) and Feld (1997a) identify Coleman as a highly central figure in mathematical sociology.

*IMS* is widely credited as a foundational work. Fararo (1997, p. 80) states that it “made mathematical sociology an identifiable part of modern sociology,” while Edling (2002, p. 198) refers to it as “the classic.”

## Stochastic Process Models

*IMS* emphasizes the use of mathematics for representing social processes. Of its 18 chapters, 11 develop continuous-time, discrete-space stochastic process models for studying transitions. Coleman used such models in theorizing about phenomena including attitude change, diffusion, voting behavior, and group contagion. He developed the implications of these models for both cross-sectional and two-wave panel data, emphasizing the equilibrium assumptions entailed by cross-sectional applications. Coleman (1981a) later revisited such models using more sophisticated methods of estimation.

*IMS* continues to attract attention; the *SSCI* records nearly total 100 citations since the mid-1990s. This indicator likely understates the influence of this work vastly, however. *IMS*’s focus on a regime of transition rates underlying the distribution of units into states is of enduring importance. This way of thinking is now widespread, most evident in the use of event-history models for longitudinal data. Tuma & Hannan (1984, p. 26) credit Coleman for introducing it into sociology.

## Structural Research Methods

Notwithstanding his interest in process, Coleman conducted a great deal of “structural” research during his early career, including sociometric analyses in *AS*, analyses of friendship ties as an element of occupational community in *UD*, and diffusion analyses (which join structural and process concerns) in *MI*. Highly committed to quantitative research methods, Coleman sought methods for studying social organization without neglecting social structure. An early article (Coleman 1958) covers both analytic techniques and data collection methods used in his empirical studies. Some later chapters of *IMS* are devoted to structural measures, and during the early 1960s he authored articles on identifying network subgroups (Coleman & MacRae 1960) and simulation methods for studying reference group and other network-related phenomena (Coleman 1961a).

Freeman’s (2004) history of network analysis points to Coleman as an influential bridge between a cluster of sociologists and an “eclectic hodgepodge” of scholars in other disciplines (pp. 130–31). Beyond this work on methods and models, social networks are a vital element in Coleman’s theoretical work, e.g., on the development of trust and norms (1990c) and social capital (1988).

## Exchange/Purposive Action Models

As his rational choice orientation developed, Coleman’s modeling work shifted toward social exchange models. Founded on assumptions of purposive action, they appealed to him as formal devices for the micro-macro transition. *MCA* (1973)

reports his first wave of work on such models. The closing section of *Foundations of Social Theory* (1990c) includes further developments, including extensions beyond exchange to unreciprocated transfers of control.

Hernes (1993) observes that the basic structure of Coleman's exchange model parallels that of an open market (see also Coleman 1992b). Coleman used it in studying exchange in the labor market (e.g., Coleman & Hao 1989) as well as collective decisions (in *MCA*), the latter application requiring specification of a decision rule as part of the environment for exchange. He pointed to the simultaneous determination of the value of resources (or events) and the distribution of power among actors as an example of the micro-macro transition.

Scholars interested in social networks and exchange theory have extended Coleman's exchange framework in several directions. Among recent contributions are Yamaguchi's (1996) power measure for systems of constrained exchanges, and Braun's (1997) effort to develop a rational choice foundation for network centrality measures by modeling network relations as interindividual investments.

## PURPOSIVE ACTION AND RATIONAL CHOICE THEORY

Over his last 30 years of writing, Coleman became an enthusiastic practitioner of, and vigorous advocate for, rational choice theory in sociology. When Swedberg (1990) asked about the genesis of this interest, Coleman pointed to Homans's (1958) exchange theory, a commentary on Parsons's paper on influence as a generalized medium of exchange (Coleman 1963), and his own 1960s work on simulation games. One of his late-career publications (1992b) described his rational choice work as "The Economic Approach to Sociology," albeit applied to phenomena that initially do not appear amenable to economic analysis. In this body of work, Coleman first concentrated on problems of collective choice and the exchange model; articles originally published between 1964 and 1978 are collected in Coleman (1986a).

*Foundations of Social Theory* (*FST*; 1990c) was Coleman's principal theoretical project and the work that he regarded as his most significant (Clark 1996, pp. 2–3). It aspires toward a transdisciplinary theory of the functioning of social systems that allows social science to aid in designing improved forms of social organization. *FST* developed over many years; its basic concept appears to have been in place by the mid-1970s (Coleman 1975). Proceeding under methodological individualism, Coleman assumed simple microfoundations: interrelated purposive actors using resources to pursue interests. From such assumptions, *FST* worked toward accounts for such social phenomena as authority systems, structures of trust, social norms, collective behavior, corporate actors, and revolutions.

Coleman begins *FST* by highlighting the micro-macro transition as the foremost theoretical problem for social science, arguing that explanations of system behavior in terms of lower-level constituent elements are apt to be more general and more useful for interventions than those that do not probe beneath the system level.

He was compelled by the capacity of economic approaches for such “synthetic” analyses. Mayntz (2004) refers to Coleman’s strategy as one of “causal regression” in the explanation of macro phenomena. This position is congenial to advocates of a “mechanism” approach to social theory. Hedström & Swedberg (1998) discuss “situational,” “action-formation,” and “transformational” mechanisms corresponding to what Coleman (1986c) terms type 1 (macro-micro), 2 (micro-micro), and 3 (micro-macro) transitions. Stinchcombe (1993) discusses conditions under which mechanism-based theorizing is more and less useful, stressing the pragmatic criterion of adding insight at the macro level.

Elementary units in Coleman’s framework are actors and resources (sometimes termed events) linked by interest and control relations. Interests, the motive governing actions, reflect a resource’s impact on an actor’s well-being. Control refers to rights to direct the use of resources; the concept of rights grew increasingly central for Coleman as *FST* developed (see Coleman 1992c, 1993c).

*FST* assumes the tractable model of the rational actor in economics partly on pragmatic grounds, so that analysis focuses on features of social organization rather than nuances of the micro model. Coleman is careful, however, to disavow assumptions that actions are independent, faulting many economic models for their neglect of social structure (Coleman 1984) and contending that such deficiencies are more crucial than micro-level inadequacies (Coleman 1986b). Social structure—interdependencies, networks, authority structures, norms, organizations, and other features—is present throughout *FST*. Noting this, Udehn (2002) labels Coleman’s methodological approach as “structural individualism.”

From this beginning, the remainder of the first part of *FST* fashions explanations for authority and trust relations. Part II covers meso-level structures—exchange, authority, and trust systems, as well as norms. These involve transfers of control among actors, compensated when they have distinct interests, but sometimes unilateral if interests are shared. Part III proceeds to theories of the constitution, construction/design, and destruction of corporate actors. Coleman regards the prominence of corporate actors as distinctive to contemporary society, and Part IV examines problems related to corporate actors, setting out Coleman’s case for “a new social science” to aid the “purposive reconstruction of society” (Coleman 1990c, p. 652). An extended formalization of many of *FST*’s earlier qualitative arguments appears in Part V.

At nearly 1000 pages, *FST* has been read at many levels. In the following sections, I focus on several specific segments of the book that drew subsequent attention, on trust, norms, social capital, and corporate actors.

## Trust

*FST* models an actor’s choice of whether to trust another as a decision under risk, asserting that trust will be extended when prospective benefits are sufficiently large. Assessing a trustee’s likely reliability is seen as especially problematic owing to incomplete information and lack of assurance about future performance. Coleman argues that social structures, including dense networks, norms, and third-party

intermediaries (advisors, guarantors, and entrepreneurs), facilitate the extension of trust as a form of social credit, thereby expanding a system's action capacity.

Hardin (2001) views Coleman's analysis of trust as one variant of an "encapsulated interest" account, stressing that few trust relations are unilateral and that reciprocal trust relations are mutually reinforcing. Ensminger (2001) contrasts such rationalist theories of trust with a general trust that rests on belief in a partner's goodwill, suggesting that knowledge-based rationalist views are applicable to situations in which risks can be assessed, whereas general trust arises in situations involving a less calculable social uncertainty.

Many recent contributions to the social science literature examine structural sources of trust, drawing on Coleman's analyses among other sources. Examples include Raub & Weesie's (1990) demonstration that social density heightens trustworthy behavior by circulating information about reputations, and Buskens & Weesie's (2000) argument that network embeddedness increases trust through learning and increased control potential. Burt & Knez (1995) contend that strong connections to third parties amplify trust, while weak ones may raise distrust. Buskens's (1998) analyses suggest that not only network density but also network centralization may increase the placement of trust.

## Norms

Coleman's concern with norms was long-standing, dating from his earliest writing (1964a) about collective decisions and rational choice. Persuaded that norms are significant features of social systems, he insisted that they should be explained rather than assumed. *FST* (p. 243) conceptualizes a norm as a rights allocation under which control over a target action is held by actors other than the one who might take the action. Coleman's theory of effective norms stresses three conditions: that beneficiary actors demand control over the target action owing to its external effects on them; that they cannot attain such control via exchanges; and that social organization can supply a sanctioning system sufficient to enforce conformity. The theory contends that network closure can be an important support for sanctioning.

Opp (2001) terms Coleman's perspective an "instrumentality" approach to understanding the emergence of norms, observing that several other accounts use a similar logic. Coleman's approach has very clear affinities with Hechter's theory of group solidarity, stressing interdependence and control capacity (e.g., Hechter & Kanazawa 1993). An active literature has developed around accounts of this kind. Among recent contributions acknowledging *FST* are Bendor & Swistak's (2001) use of evolutionary game theory to work from rational choice assumptions to norms and Horne's (2004) experimental research demonstrating that norms tend to be enforced when actors can anticipate benefits from doing so. Nyborg & Rege's (2003) study of norms about smoking behavior observes that compliance can bring benefits to targets as well as beneficiaries, and that formal regulations about

smoking in some settings can affect norms in unregulated areas. Elster (2003) is very critical of Coleman's analysis of norms. He contends that some norms do not benefit anyone and argues that conformity with norms is driven more by a wish to avoid shame and contempt than by the anticipation of gain.

## Social Capital

As noted, Coleman's interest in social capital grew out of his empirical studies of education. It has garnered the most subsequent attention of any of his theoretical work. As of late 2004, his article "Social Capital in the Creation of Human Capital" (1988) has been cited more than 1300 times. Among *FST* citations designating a specific chapter or page, many more refer to the chapter on social capital than to any other part. That this work has received such attention is somewhat ironic, for Coleman (1990c, pp. 304–5) noted that "social capital" serves to group together other processes he discusses in *FST*, rather than to introduce fundamentally different ones.

For Coleman (1988, p. S98), social capital refers to features of social structure that facilitate action. Among these are systems of trust and obligations, networks disseminating information, norms accompanied by sanctioning systems, centralized authority structures arising through transfers of control, and "appropriable social organization" that may be used for purposes distinct from those that led to establishing it. This variety in forms of social capital makes it clear that Coleman regarded it more as a covering term for "useful social organization" than as an identifiable "variable." He noted that benefits of social capital often accrue to actors other than those who produce it, concluding that it may be undersupplied owing to public-goods problems.

Virtually all recent discussions of social capital give substantial attention to Coleman's conceptualization (e.g., Portes 1998, Burt 2000, Lin 2001, Sobel 2002, Kadushin 2004). Its functional definition has been widely critiqued: Whether a given feature of social structure represents social capital cannot be ascertained without knowing its consequences. Portes (1998), among others, stresses the potential negative consequences of social capital.

It is clear that many, if not all, of Coleman's examples of social capital involve social network phenomena: networks of dependency creating obligations, networks of consultation offering access to information, social density supporting sanctioning systems for norms. Several commentators contend that a more useful definition would restrict the concept to network-related phenomena; Lin (2001, p. 25) prefers "resources embedded in social networks accessed and used by actors" and Kadushin (2004, p. 88) suggests "networked resources."

Many discussions remark on the network forms that give rise to social capital. Coleman's work on education stressed network closure, while others, notably Burt (1992), emphasize open network configurations that offer opportunities for autonomous action. These images can likely be reconciled. Coleman was concerned with a situation in which agents of control (parents and teachers) seek to



create human capital by constraining students to remain in school and take actions that further academic achievement, and social density arguably facilitates this. Other circumstances, such as career competition among managers, may place priority on the access to opportunities and information that open networks grant. Because social capital is less liquid or fungible than other forms of capital (Coleman 1988, p. S98), different social structures generating social capital are apt to be useful for different goals (Sobel 2002).

## Organizations and Corporate Actors

Coleman accords “new corporate actors” or “constructed social organization” a very central place in *FST*; indeed, his (1993b) ASA presidential address was on this subject. He regarded role-based social organization as “probably the most fundamental social invention until now in the history of society” (1970, p. 163). Coleman had previously published two books about corporate actors (*Power and the Structure of Society* [PSS; 1974] and *The Asymmetric Society* [1982b]). He was most struck by the pervasiveness of corporate actors in modern society.

*FST*'s view of authority relations is Barnardian: Rights to exercise authority are granted (and may be withdrawn) by subordinates in anticipation of benefit. Systems of authority expand the potentially viable forms of social organization, allowing forms in which not all dyadic transactions must be mutually profitable. Reflecting *UD*'s concerns with Michelsian goal displacement, Coleman stressed the agency problems that may plague authority systems when subordinates pursue their ends rather than a principal's, as well as usurpation of authority by superiors who extend their reach beyond the bounds specified by a subordinate's grant.

On a larger scale, the latter sort of drift in power is especially significant for Coleman. Favell (1993) observes that a major value premise of *FST* is that “corporate actors merit existence only insofar as they further the ends of natural persons” (Coleman 1990c, p. 351). Concerned about their capacity to concentrate power and about the welfare of those (notably children) not strongly affiliated with corporate actors, Coleman placed especially high priority on the social control of corporate actors. Among suggested tactics for restitution were both manipulation of external environments (via, e.g., tax laws, maintenance of pluralistic competition, creation of countervailing corporate actors, external audits) and interventions in the internal structure of corporate actors (e.g., adding representatives of workers or other stakeholders to governance structures, increasing the power of outside directors, altering reward structures for agents, creating shorter “backward policing” feedback loops). He made proposals (e.g., Coleman 1993a) to redesign schools, the organizations he knew best.

Swedberg (1996, 2003) views this work as a significant contribution to economic sociology, writing favorably of Coleman's account of the origin of corporate actors and his approach to their redesign. Scott (2004, p. 9) remarks that *PSS* “eloquently reframed” concerns about organizations as systems of power by stressing the division of power between organizations per se and individual persons rather than among individuals alone.

At present, though, the influence of this body of Coleman's scholarship appears more modest than he might have hoped. Stern & Barley (1996, p. 147) describe *PSS* as a "classic treatise," but also opine that Coleman and other scholars concerned with the impact of organizations on society are "increasingly marginal to mainstream organization theory" (p. 149). Taken together, Coleman's two books on corporate actors (1974, 1982b) have been cited only about six times per year since 1995 in sources indexed by *SSCI*, and few references to *FST* point specifically to parts focused on corporate actors. Stern & Barley (1996) offer several conjectures about why current organizational research rarely assumes a "social systems perspective," including career incentives and the professional-school locus in which much organizational research is now pursued. Lindenberg (2003), however, argues that Coleman's theoretical system is insufficiently complex for the task of institutional design, contending that this requires a broader "social rationality" that takes socialization and preexisting social organization into account.

## Discussion

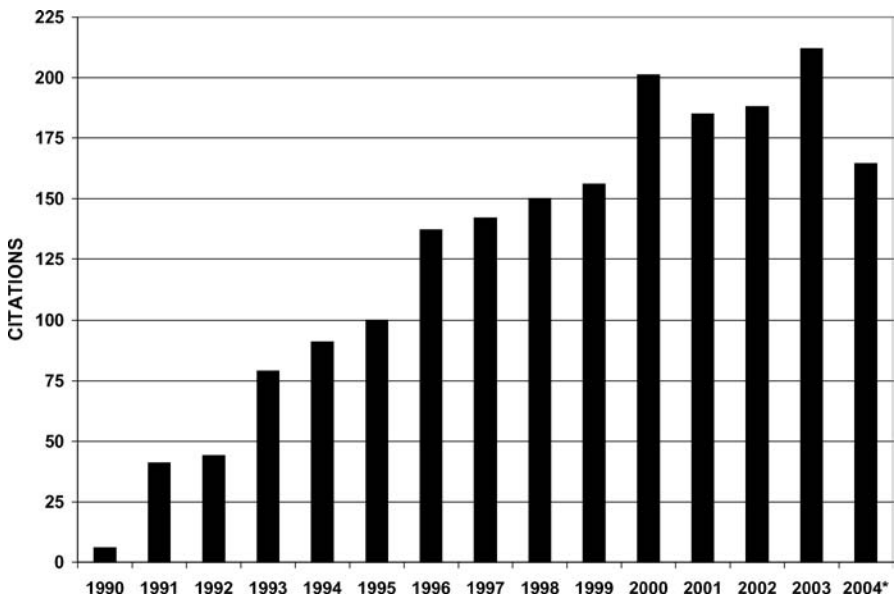
*FST* was reviewed very widely after its publication in 1990. At least four review symposia—in *Contemporary Sociology* (November 1990), *Acta Sociologica* (June 1991), *Theory and Society* (April 1992), and *Analyse & Kritik* (Spring 1993)—were devoted to it. Although the tone and content of reviews varied and most acknowledged *FST* as a major theoretical work, on balance they tended to be critical. Many commentators were dubious of the rational micro model and skeptical that sociology can be constructed on individualist postulates, observing, among other things, that choice takes place within existing institutional complexes. Coleman (1992c) offered a relatively concise statement of the points in *FST* that he regarded as most central. The book continues to receive scrutiny: Ten essays (most in French) about it appear in the April–June 2003 *Revue française de sociologie*.

In some subsequent overall discussions of *FST*, Fararo (1996) compares its rational-individualist approach to other foundational efforts in theoretical sociology. Among his critical points is that while Coleman often takes account of social relations, he does not account for them. Lindenberg (1996) is sympathetic to a rational choice approach but calls for a broader "relationalist" version involving a more elaborate micro-level model; elsewhere (2000) he calls attention to the importance of macro-micro as well as micro-macro transitions. Favell (1993) discusses Coleman's effort to link positive social theory and moral philosophy, concluding that *FST* compares favorably with other attempts to develop a normative sociology, but that much remains to be accomplished before rational choice approaches can establish persuasive connections.

Some broader discussions of rational choice theory in sociology highlight *FST*. Hechter & Kanazawa (1997, p. 195) term it the most important theoretical development in this field. Collins (1996) considers the prospects for rational choice as a unified approach to social science, observing that it is most useful at meso-levels of analysis, arguing that more attention to emotions at the micro level is needed

and suggesting several institutional features of sociology that may inhibit such unification. Smelser (1992) argues that the “individualistic positivism” in *FST* and other rational choice theories is a historically specific epistemological preference. He also cautions that efforts to cleanse rational choice models by relaxing restrictive assumptions run the risk of degeneration toward theoretical indeterminacy. Abell (2003, p. 258) is generally sympathetic to a reasoned/rational action approach as a “least bad” starting point for theoretical sociology, but he argues for a somewhat broader narrative action theory within a methodological individualist framework. Abell’s narrative action theory assumes consistency and optimization of self-interest on the part of actors, but it allows beliefs and preferences to rest on past experience as well as on anticipated consequences.

Figure 1 displays annual citation counts to *FST* since its publication, as recorded by the *SSCI*. As of late 2004, more than 1850 indexed works have referenced it, the trend generally increasing over time. About 36% of *FST* citations are from within sociology; 13% come from economics, and 11% from the combination of business and management. The remainder are spread across the social sciences. The work receives a great deal of attention from European scholars. More than 20 articles in each of the following journals cite *FST*: the *Kölner Zeitschrift für Soziologie und Sozialpsychologie* (31), the *Zeitschrift für Soziologie* (23), *Acta Sociologica* (22),



**Figure 1** Citations to *Foundations of Social Theory*, 1990–2004. Source: *Social Science Citation Index*. \*Annualized based on count through October 2004.

and the *Zeitschrift für die gesamte Staatswissenschaft* (22).<sup>4</sup> At a minimum, *FST* has occasioned very animated consideration of an approach to sociology founded on rational action.

## CONCLUSION

Lindenberg (2000, p. 541) wrote that “Coleman’s place among sociologists of the second half of the twentieth century is likely to remain unequalled.” This is high praise, and although there are doubtless many who would contest such a broad claim, Coleman’s accomplishments and continuing influence on contemporary social science are of extraordinary magnitude indeed. His education studies leave a massive legacy for social science research and public policy alike. He arguably defined the field of mathematical sociology, and made widely recognized contributions to network theory and methods. *FST*’s ambitious program statement inspired widespread debate over the character and direction of sociological theory and helped to establish a stable if limited niche for rational choice theory in sociology. Coleman’s education and rational choice work are linked at several points, most visibly in currently vibrant scholarship on social capital.

Beyond his voluminous writing, Coleman influenced the training of legions of educational and rational choice sociologists, many of them cited in the preceding sections. He also made enduring institutional contributions as the founding editor of *Rationality & Society* and a prime mover behind the establishment of the ASA Section on Rational Choice.

## ACKNOWLEDGMENTS

For helpful comments on previous drafts, I am grateful to Editor Karen Cook, Peter M.E. Hedström, and Chris Winship. The photograph of James S. Coleman is courtesy of the University of Chicago News Office.

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<sup>4</sup>Across all indexed journals, *Rationality and Society* contains the highest number of citations to *FST* (61), followed by the *American Journal of Sociology* (41), *Social Forces* (36), and the *American Sociological Review* (35).

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