Through the Lenses of Organizational Sociology: The Role of Organizational Theory and Research in Conceptualizing and Examining Our Health Care System*

ANN BARRY FLOOD
Dartmouth-Hitchcock Medical Center

MARY L. FENNELL
Brown University

Journal of Health and Social Behavior 1995, (Extra Issue):154–169

This paper reviews various theoretical perspectives on organizational change which have been and could be applied to medical organizations. These perspectives are discussed as both filters influencing our observations (research) and mirrors of the shifting dynamics of delivery system reform (policy). We conclude with an examination of how such theories can provide useful insights into our rapidly changing health care system.

To describe the evolving contributions of organizational theory and research which focus the attention and color the understanding of medical sociologists regarding our health care system, designer prescription sunglasses proffer an intriguing though perhaps irreverent analog. Consider first the effects of being the wearer, making observations through dark lenses that distort information in order to soften the contrasts of the scene, counter recognized deficiencies in acuity, and create a focused picture not otherwise discernible. From the perspective of an independent observer, a truncated version of this same view is reflected on the mirrored surfaces of the glasses, which stretch and rotate the image and obscure the specific targets of the wearer's concentration.

An historical interpretation of what we know about medical organizations needs to recognize the extent to which we *color* our observations of phenomena and sharply *focus* our theories by viewing conditions through the lenses of the questions we pose and the assumptions we make. These questions, applied to medical organizations, have both contributed to and been inspired by the theories and observations used to examine other types of organizations. Relevant explanations invoked to study medical organizations include the professional model, institutional theory, ecological theories of organizations, exchange theory, contingency models of effectiveness, agency theory, economic models of behavior, and transaction models. It should be noted, however, that although the specific lenses we don can change our perceptions in subtle ways, the more profound reasons for major conceptual paradigm shifts in our explanations and observations derive from the fact that our sunglasses serve also to *mirror* substantial ongoing changes in our health care system and in its organizations. Our theories often change or refocus as a direct result of the events and historical changes unfolding in the health care system.

Thus, rather than summarizing research evidence during the past two decades which supports what we currently know about medical organizations, this review instead examines the lenses themselves. We turn first to canvass key questions which have shaped our inquiries.

* Direct correspondence to Ann Barry Flood at the Center for Evaluative Clinical Sciences, Dartmouth-Hitchcock Medical Center, HB 7250 Strasenburgh, Hanover, NH 03755-3863 or e-mail ann.b.flood@dartmouth.edu.

We then examine how the lenses of different theories about organizations have contributed to whether and how these questions are addressed. In the final section of the paper, we address where we need to go next and ponder what roles the wearer of these lenses, other than that of being a passive observer of events and behavior, might find appropriate. We also briefly consider the reflexive influence of system change on the lenses themselves.

Key Questions Shaping our Inquiries about Health Care Organizations

(1) *What is a health care organization? What do we mean by our system of health care?* For example, what are the organizational boundaries of a hospital; do they include the formal and informal networks within its environment? How do actors and structures help bridge the connections within and between organizations?

(2) *How are medical organizations different from (or the same as) other organizations*? For example, do the demands and forms of professional control such as peer review and the type of work make evaluation in hospitals and group practices different from other types of service organizations? Do legal liabilities for accountability in health care make them different? Are mechanisms and motivations for efficiency, or for integrating services across organizations, the same as for other types of service organizations? What is the impact of not being able to control payment of employees like doctors in hospitals?

(3) *How do we describe and categorize the activity we see?* For example, do we focus only on the actions of intraorganizational structures and performers? Do we acknowledge the possibility of strategic planning? Do we recognize the constraints imposed by external factors such as area competitors or regulatory bodies or the larger context of social norms and sociodemographics?

(4) *Who are the primary decision makers in medical organizations and what do they decide?* For example, do we focus on the provider-patient dyad? Even here, in what types of decisions do patients truly play a significant role in the *choice* among treatment options as opposed to *where* and *when* to seek treatment only? What decisions are influenced by external stakeholders like regulators, third party payers, and corporate levels of hospital systems? What are the domains of decision-making for managers and providers? How is decision-making (both by the provider and by the patient) influenced by the patient's family structure and social networks? Which decisions are within the domain of formal organizations and which belong to primary groups?

(5) *What are the antecedents of and motivations for behavior by management, workers, and owners, or patients for that matter?* For example, do we look at chaos (or seemingly random behaviors or actions) and find structure and rational behavior? Or do we look at rational behavior and see instead post hoc rationalizations of actions affected largely by coincidence and proximity?

(6) *What defines and contributes to organizational effectiveness?* For example, is long-term survival of the organization the ultimate indicator of its effectiveness? What is the nature of community or public obligation toward health care organizations? Does effectiveness depend on the perspective of the evaluator or the level of analysis? Does it vary by age of the organization or economic or organizational context? Is there a meaningful summary measure of whether a health care organization is effective? Or is effectiveness better portrayed by independent measures based on multiple criteria and examining separate spheres of work?

(7) *Why and how do health care organizations and the system change?* For example, what internal and external factors motivate and mold behavior in these organizations? How can an organization or industry learn from its past experiences or from that of other organizations? How do organizations innovate, adopt others' innovations, or adapt to altering environments?

Viewing Medical Organization Through the Lenses of Theory

In this section, we present a brief overview of some of the major theoretical paradigms which have been utilized to address the above questions and which have entered into our

lexicon for explaining them. In many respects, these paradigms are not truly discrete from each other, but overlap in some of their underlying assumptions while attending to different aspects of organizations. In this context we illustrate their relation to the key areas of inquiry and discuss their importance for understanding medical organizations and the health care system.

The professional model of organizations and control of work. The professional model rests on several assumptions about health care organizations. First, it focuses on a narrowly defined conceptualization of organizations, seeing them as primarily independent entities. It assumes that organizations are primarily rational, goal-oriented systems designed to carry out their core tasks effectively and manage whatever ancillary tasks are needed to support the core. It sees providing health care—especially by physicians—as work that sets medical organizations apart from other types of organizations in important ways.

At its most basic level, the professional model argues that organizations whose core activities are carried out by professionals, such as physicians in office practice settings or hospitals, use a different form of control than do bureaucracies. The authority necessary for defining and carrying out the core tasks of providing medical care is decentralized to the professional, whose performance is controlled by way of the knowledge, skills, and socialization received during extensive professional training and is monitored, evaluated, or censured by peer mechanisms.

However, this model was quickly recognized as inadequate to describe all of the activities needed to carry out the tasks within more complex medical organizations such as hospitals. Controlling performance also requires more standard bureaucratic controls for the hotel service-type activities in hospitals and even for some types of core work, such as coordinating patient care across different units at the hospital. And even the professional staffs exhibit more variation in control mechanisms than this simple model acknowledges. Scott (1982), for example, noted at least three basic models for embedding professionals into an organization: (1) *autonomous*, where professionals (like physicians) retain authority to control and evaluate themselves as a group; (2) *heteronomous*, where professionals (like nurses or social workers or skilled technicians) are subject to more line-authority control; and (3) *conjoint*, where professionals and administrators mutually recognize their separate domains of expertise and power but also their shared benefits and need for collaboration.

Change in the professional model is also related to change in underlying theories about professions and professional work (see Hafferty and Light this issue). Freidson's early definitive work on medicine explained provider performance as a combination of factors, including practice attributes, referral networks, and organizational structure (Freidson 1970). Professional status was linked strongly to autonomy. Exclusive claims to autonomy in the medical arena, however, have been eroded by the separation of the medical "knowledge elite" from the "administrative elite," the latter wielding economic and organizational power (Freidson 1987), and by a host of countervailing interests (such as government and corporate actors, and other professional groups) whittling away at the boundaries of medicine's core domain (see Halpern 1992; Light 1993; Mechanic 1991).

More recently, versions of the professional model (Burns 1989; Scott 1987; Scott and Backman 1990; Shortell 1983) recognize an even greater interface between and hybridization of the bureaucratic and professional modes of work and subsequently of control. They describe, for example, a macro matrix of relationships in hospitals where core work is accomplished by teams, only some of whose members are professionals, requiring a more complex system of accountability and decision-making. These revised professional models also note that the form of control used often depends on the type of *work*, rather than the *professional* status of the worker, so that there really is no pure split of control mechanisms by occupational status. While professional models recognize the potential impact of environmental influences, they are usually portrayed in the context of *constraining* professionals (like legal constraints on the practice of medicine and determination of malpractice or regulatory, third party pressures which affect decisions to treat).

Models of decision-making in health care. March (1994), summarizing the basic tenets of numerous models of decision-making in health care and other organizations, argues that such models basically take one of two forms: One set portrays good decision-making as the application of appropriate rules or the rational assessment of the strengths and weaknesses of

various alternatives. Appropriate actions maximize the preferences of the interested parties. The process may have to proceed in the face of uncertainty, although if there *were* perfect information and prognostic capabilities there *would be* a best answer. The other type of model portrays decisions as requiring an interpretation of what the situation is and what an acceptable solution would be. Although decisions are based in part on shared objectives and principles among members of the group, they reflect negotiations of convenience and often contain deliberately vague language and vague expectations. Such loose coupling of decisions to explicit policies and preferences of the decision-makers helps to minimize or conceal potential conflicts. Here, uncertainty as a complicating factor is replaced with ambiguity, where even *with* perfect knowledge and prophesies there still *would not be* a best decision.

Examples of both types of models of decision-making are currently used in medicine to portray decisions at all levels. At a doctor-patient level, there are formal utility assessments of patient preferences for various outcomes of alternative treatments (Nease, Owens, and Bonduelle 1987; Shmerling et al. 1990; Sox, Littenberg, and Garber 1989) versus assessments of the impact of language and interpretation on decisions to treat (Treichler and Cartwright 1992). Rational decision-making at an organizational level is illustrated by models of strategic decision-making processes used by individual hospitals or multi-institutional corporations (Bigelow and Mahon 1989; Kaluzny et al. 1993; Morrissey and Alexander 1987; Shortell, Morrison, and Friedman 1990; Topping and Hernandez 1991) and assessments of rational behavior by stakeholders such as boards of trustees (Weiner and Alexander 1993). Interpretative decision-making is illustrated by "the garbage can" model to describe decisions made in the context of time constraints and competing activities and only loosely coupled to strategic thinking (March 1994). This last model can be applied to hospital strategic decision-making (Thomas, McDaniel, and Anderson 1991). Similarly, the shareholder-rights movement has been used to explain how corporate decision-making can become a platform for anti-management resolutions and activist decisions by boards of trustees (Davis and Thompson 1994).

Finally, interpretative decision-making is also invoked in questions concerning the appropriate division of labor (and locus of decision-making control) between formal bureaucratic organizations and primary groups such as families and social networks (Litwak and Messeri 1989; Messeri, Silverstein, and Litwak 1993). Clearly, medical care decisions often include the patient's family structure and resources in care planning. However, the question cuts much deeper than this, and underscores many of the most thorny ethical dilemmas of our age. Do families and supporting kin have control over life support disconnection decisions, and over organ donation, or do corporate actors, whether medical care organizations or legal systems?

Models of organizational determinants and assessment of performance. Two criteria for evaluating performance have dominated evaluation of health care organizations: the quality of medical care received by patients (including their satisfaction with services) and the cost/efficiency with which health care is delivered. These criteria are generally used to evaluate individual providers and provider institutions, but some have tried to apply them to multi-institutions as well. A third criterion, access to health care services, is generally applied at a population level. All three standards are obviously rooted in the professional/medical definition of the core task to maintain or improve health and/or the quality of life of patients. All three criteria are also undergirded by legal and regulatory accountability for minimum standards. In this context, the professional version of effectiveness recognizes the causes of good or poor performance as those which are primarily internal to the organization such as the experience of staff or the stringency of quality control mechanisms. Environmental influences are understood to present constraints on access to care, to add considerable uncertainty to the process of providing care, and to play important roles in overseeing professional performance.

Others have taken different approaches to examining the question of performance. Some, adopting an ecological or open-systems perspective, emphasize the fateful importance of environmental factors, which cause health care organizations (or their multi-institutional counterparts) to either succeed, adapt, or fail (Alexander and Amburgey 1987; Fennell and Warnecke 1988; Rundall 1987; Singh and Lumsden 1990). For example, hospital closures have been examined in the context of unfair biases and failures to adapt to the introduction of the

Prospective Payment System (a lump-sum, standardized payment for Medicare patients; see Feder, Hadley, and Zuckerman 1987; Gianfrancesco 1990; Long et al. 1987; Longo and Chase 1984; Topping 1991; Scheffler et al. 1994). Others observe the mutual accommodation between environments that can also adapt to organizations as well as vice versa; for instance there are cases where modifications are made to the payment system to protect certain types of vulnerable hospitals such as those serving rural or inner city populations (Boeker and Goodstein 1991; Fennell and Alexander 1993).

In general there has been substantial emphasis within organizational theory over the past 20 years on questions of how the broader environmental context, whether defined as markets, industry, or sectors, influences both the definition of organizational boundaries and the influence of organizational structure on performance. This interest has cut across both major theoretical approaches (i.e., strategic choice vs. ecological models) and levels of analysis (the organization, organization set, field, sector, industry, network, or population; e.g., Meyer and Scott 1983). How to define both structure and performance varies greatly, depending upon whether one focuses on the strategic action of individual organizations, or the structuration (connectedness) of an organizational field (DiMaggio and Powell 1983). The boundaries of an organization are itself open to definition and redefinition, as hospitals become embedded in multihospital systems, alliances, diversified systems, or networks (Fennell and Alexander 1987). In these newly evolving complex settings it becomes even more difficult to differentiate between the organizational and system boundaries and their environments. Largely as a consequence, performance measures must also try to bridge what formerly was considered unbridgeable—for example, profit and nonprofit sectors, acute and long-term care facilities, and contracts with third party payers which contain conflicting financial incentive structures (Clarke and Estes 1992).

Nonetheless, other scholars in medical sociology have focused on the process of and reactions to evaluation per se, emphasizing the impact that evaluations and their implied rewards or punishments have on the motivation and behavior of persons or organizations being evaluated. In health care organizations, the preferences for control mechanisms of the professional model (e.g., evaluation of peers and control by the profession itself) are juxtaposed with the multiple realities of who can and does monitor professional performance and who has the authority to judge whether quality has been assured through appropriate care. The interests of the evaluator, whether a peer physician who knows that his/her performance will also be evaluated by peers or whether an external group with a financial incentive to deny payment for services, color everything—the choice of criteria to be evaluated, the magnitude and direction of the performers' reactivity to the evaluation, the perceived legitimacy of the evaluator, and the performers' motivation to comply with or "game" the evaluation (Flood, Scott, and Shortell 1994; Scott 1987).

Quality assurance versus continuous quality improvement. Financial incentives seem to offer a relatively straightforward path to motivating providers to be efficient or generous in the volume of services they deliver and to provide easy access to them (see agency theory below). Less obvious is how to assure that quality is maintained or maximized, particularly if this goal conflicts with financial incentives to provide services.

Two fundamentally different models of how to motivate providers to provide good quality of care have developed in medical organizations (see review in Flood 1993). The typical quality assurance program is based on a combination of the professional model's assumptions (e.g., that all physicians at the end of their training meet or exceed the minimum standards of skill and knowledge and are self-motivated to perform well, requiring only periodic oversight by peers to be held accountable) and a governmental/legal responsibility (e.g., to hold providers culpable for poor performance and at an extreme, to de-license or censure incorrigible providers).

There are several basic arguments underlying quality assessment approaches. Performance is fundamentally an attribute of individual providers or hospitals; while others may contribute to care, the responsibility for decisions and care is fundamentally in the hands of the professional. Punishment of substandard performance is rarely needed. Professionals are recognized to be best at evaluating the work of their peers, although monitoring and data gathering can be accomplished by others and the control system does depend ultimately on legal authority to

hold providers accountable. Thus, while the most effective monitoring may be internal to the organization, external and independent peer-evaluators are needed to keep the system honest. While financial incentives might play a role in professionals' decisions, poor performance or failure to help in an emergency are not excused by the patient's inability to pay.

The alternative model, currently in vogue in health care organizations, is borrowed from an industrial model of continuous quality improvement (CQI) (cf. Berwick, Godfrey, and Roessner 1991). This model makes different assumptions, many of which are shared by other models which examine non-financial motives of behavior, such as theories of distributive and procedural justice or social comparisons (Baron and Cook 1992). The basic assumptions are: (a) motivation for good performance is not simply driven by financial incentives; (b) everyone basically wants to do his/her best, so suboptimal performance is not intentional; (c) evaluations for CQI are not about job evaluations and finding bad apples but about assessing the entire process of producing the ultimate outcome/product and eliminating barriers to efficient production and better outcomes; (d) identifying these barriers can best be done by key workers operating in teams, with support from management for the processes of CQI and for implementing the resultant advice; (e) professionals in this process, albeit important, are just members of the whole team involved in producing the product.

Interestingly, CQI, with its attention to finding system problems, emphasizes the need to create a supportive organizational culture to view performance and to motivate workers to do their best. This focus has returned attention to the potential for organizational culture to impact effectiveness (Flood et al. 1991; Shortell et al. 1994). But the widespread adoption of CQI itself has galloped well ahead of any research to prove its effectiveness in health care, providing another example of the process described by institutional theory (see below).

Agency theory. Using the concepts and arguments of agency theory (Fama 1980), several authors dispute as myth the professional model's claim that a physician can truly act as a perfect clinical agent for the patient, choosing all and only those services which will meet efficiently the goal of improved health or quality of life (Dranove and White 1987; Fennell and Alexander 1993). Instead, they argue that the economic incentives inherent in the provision of professional care sway the medical decisions of the physician who, while expected to act as a neutral agent in recommending services, stands to either profit or lose depending on the choice. Following the arguments of economists such as Enthoven (1980, 1993), the physician (agent) in a prepaid payment setting is financially rewarded for providing minimal and/or the least expensive among alternative services. In a fee-for-service setting, the agent is rewarded for providing all services with a potential, even if unlikely, for helping, and/or choosing the alternatives with the greatest potential for personal profit. Therefore, agency theory would suggest that the physician is likely to make different clinical decisions in these two situations, even when confronted with the same basic illness and type of patient.

While professional training and peer control may serve to restrain such profit motives, many have observed that such controls do not censure strongly enough to eliminate pursuit of these economic incentives (Flood 1993). Thus, the control systems need to be contingent upon the type of economic incentives confronting the agent (e.g., prepaid vs. fee-for-service payments as discussed above or in other situations such as when providers receive indirect rewards for referring patients to other service providers [Hyman and Williamson 1989; Inglehart 1991; Kusserow 1989]).

While the agency model seems appealing to explain why prepaid care has resulted in fewer services delivered to its patients, it too seems simplistic. For example, if the incentives inherent in prepaid insurance work to prevent overuse of care, but not necessarily to prevent its under-use, why then do most managed care plans precertify use of services and use concurrent reviews to evaluate the appropriateness of extra days in the hospital, rather than monitor for under-use? Is it because: (a) physicians forget their self-interest, perhaps due to old professional values learned during training or due to confusion because they may be treating *both* fee-for-service and prepaid patients on a regular basis? Or is it because (b) managed care insurers (including the federal government for Medicare and Medicaid patients) are acting in their own self-interest, irrespective of that of the provider or patient, when they seek to provide minimally adequate usage?

The impact of insurance as a financial incentive for the physician is more complex than the

simple dichotomy of prepaid vs. fee-for-service. Mixed and complex financial arrangements appear to be the norm rather than the exception (Feldman, Kralewski, and Dowd 1989; Hillman 1987; Hillman, Pauly, and Kerstein 1989; Konrad and DeFriese 1990; Miller and Luft 1994; Welch, Hillman, and Pauly 1990). More importantly, these complex arrangements generally include contractual arrangements between organizations, not between individual providers and their patients. To discover how financial incentives truly impact individual providers making decisions (perhaps with the exception of solo practitioners), it is important to examine incentives at this level as well. For example, how does the organization actually pay the physician for services rendered? Does such payment differ depending on insurance? It is important to consider other factors influencing decisions to order services as well. For example, does the group or individual provider see a mixture of both fee-for-service and prepaid patients? What is the size of the practice and general health of the patients served? How competitive is health care in the region?

Agency theory has also been used at an organizational level to describe the self-interested actions on the part of hospital management and other agents and the role of the board of trustees to monitor and contain such behavior if it counters the interests of the institution (or of a parent corporation at a more complex organizational level; see Fennell and Alexander 1989; Judge and Zeithaml 1992).

Both perspectives of health care providers as agents provide insights into the nature of control systems needed in professional organizations. One suggests that there is a need to consider the unusual and complex nature of reward structures in health care organizations. The other perspective points to the complexity of the mix of parties who each have a stake in the organization. But both imply a need for control systems with the flexibility to adapt to changing conditions and the means to control resources of value to these parties. Coupled with insights from evaluative theories and transactional theory (see below), agency theory implies that there can be high costs associated with monitoring and averting counterproductive performance of self-interested individuals, suggesting the desirability of designing and implementing basically self-enforcing reward structures.

Institutional theory. Examples abound of organizations' willingness to engage in substantial reorganization to carry out strategies whose value is presumed rather than known. Anecdotal evidence suggests that many medical organizations and insurers, trying to anticipate the impact of major health care system reform in the late 1990s, have begun to make profound and costly adaptations to protect their long-term financial viability long before Congress has settled on the basic features of whatever new policy a reformed system might evolve, let alone revealed its details. For example, in mid-1994, shortly before formal debate had begun in Congressional committees, the largest for-profit chain of hospitals in the country purchased one of the largest chains of same-day surgical centers. With similar timing, one of the largest group practices merged with several other group practices while their providers still worried about whether they were big enough to be viable (Freudenheim 1994). Bigelow and Mahon (1989) report on the widespread popularity of specific strategic approaches taken by medical organizations to save money. Despite a dearth of compelling evidence of their usefulness, the following strategies for cost-cutting become imperatives for the modern managers of medical organizations: integrate vertically; adopt expensive cost-accounting systems; adopt product line management. Yet another example is offered by continuous quality improvement for health care services. Despite little or no proof of the cost-effectiveness or appropriateness of widespread adoption of CQI, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has rewritten its accreditation procedures on quality to promote and endorse the use of CQI in hospitals (JCAHO 1992), and hospitals and clinics rush to train their members in the language and approach of producing work for chains of customers and benchmarking their organization's performance against the best in the industry.

What leads organizations to engage in expensive and difficult adaptations in the absence of evidence that they will be better off in the end? One answer is contained in institutional theory. Proponents of this perspective (Meyer and Scott 1983; Meyer, Scott, and Deal 1981; Mick and Associates 1990) argue that it is useful to distinguish between two facets of an organization's environment: *institutional* and *technical*. Technical environments relate primarily to market and production concerns; institutional environments involve the social and political structures

to which organizations must conform. Both sets of constraints are of importance to medical organizations, and both have been used in models of organizational change in the health sector. However, a variety of different factors are subsumed within each type of environment, and over time there will be changes in the criticality of each set of environmental factors in determining how and why organizations change. Scott (1987) provided a useful summary of institutional theory through the mid-1980s, and further changes have been charted by Powell and DiMaggio (1991). While many variants of institutional theory have developed, the analysis of multiple institutional environments or forces to which organizations must respond has been particularly useful for understanding such changes in health care. For example, DiMaggio and Powell's (1983) concepts of institutional pressure (coercive, normative, and mimetic) can help elucidate recent trends in health care organizations.

Within the health care sector, the impact of major new regulatory programs can be understood as an example of coercive power (pressures to comply with the dictates or policies of other organizations, particularly government agencies or parent firms). One of the most significant regulatory changes of the past decade was the implementation of the prospective payment system (PPS) for Medicare hospital reimbursement in 1983. This change was coercive in the sense that hospitals had to adopt the system if they wanted to be reimbursed for the care of any Medicare patients. As a consequence, PPS radically changed the payment structure for hospitals from cost-based to prospective payment, in which Medicare payments were made at a predetermined, specified rate for each discharge. PPS has been described as the catalyst of cost containment, and a number of recent studies have begun to document its influence on various dimensions of hospital behavior, including shifts in the use of treatment technologies (Sloan, Morrissey, and Valvona 1988), diversification into outpatient services (Updaw 1987), and a reduction in the growth of Medicare inpatient hospital expenditures (Chulis 1991).

Recent changes in the power of key groups in health care is well-illustrated as an example of normative pressure (pressures on organizations to comply with the expectations and values of powerful interest groups). Physicians have always been considered the primary (and controlling) professional group within hospitals, and physician norms and expectations have historically guided hospital strategic planning and growth (Starr 1982). The erosion of their primacy for determining hospital policy and growth is due in part to the rise of other key actors. For example, Scott and Backman (1990) note the rise in the number and power of allied professionals, and attribute these changes in occupational identities to the increased complexity of medical technology. Similarly, the rise in status of professional managers comes from their generalized knowledge of management theory and skills in an increasingly complex organizational setting. Nonetheless, these new professional groups bring competing sets of norms, values, and expectations concerning administrative efficiency and management control which can be in direct conflict with traditional medical values of individual autonomy and physician dominance. These conflicts help explain the change in the balance of power within health care organizations.

A second example of normative pressure comes from society at large, and the changing place of medicine within our institutional infrastructure. Although the general normative structure of medicine has always supported the dominance of the medical profession and physician autonomy, many of the developments in the health sector discussed in this special issue suggest that the traditional normative structure of medicine (and its place within society) has begun to erode. Corporations control decision-making, managed care intervenes in the doctor/patient relationship, and consumers of medical care ask many more questions than they used to. Alexander and D'Aunno (1990) suggested that institutional constraints in the medical sector have begun to experience some amount of delegitimation, and that emphasis has shifted toward technical constraints that emphasize efficiency, cost concerns, and the corporatization of medical care.

Finally, the adoption of expensive cost systems and CQI techniques can be explained as an example of mimetic pressure, the pressure to mimic seemingly successful organizations. This pressure stems from the need to "do something" when conditions become uncertain. When successful adaptation is not well understood, an easy path is to copy or mimic what other organizations have done, particularly those which appear to be doing well. Mimetic isomorphic pressures generally operate when it is difficult or impossible to evaluate an organization's

output directly. In this setting, evaluations focus on indirect measures that show that a good product *probably* resulted because the organization had the kinds of structures and followed the kinds of procedures the industry believes to be effective. New forms of management are adopted, not because they are known to help the organization, but because they reflect current norms and beliefs about what modern managers do. In this way, this type of environment promotes rapid dissemination of strategies believed to be industry standards, regardless of their proven efficacy.

Although the examples introducing this section have emphasized the institutional environments in our health care system, most would agree that technical environments also exist. In contrast to institutional pressures, technical environments tend to operate when the efficiency and desirability of the product can be determined. These environments measure standards directly and reward organizations on the basis of how well their products measure up to these standards. For example, organizations which have shifted some surgical procedures from expensive inpatient stays to same-day discharges from surgical centers have been rewarded with greater profits and popularity among patients and insurers.

Transaction theory. Transaction theory offers an alternative explanation for when and why organizations are likely to integrate with other organizations, however formal or informal the contractual relationship (Williamson 1975). In this theory, organizations are viewed as systems for managing exchanges or transactions. There are costs involved in any negotiation or exchange. To the extent that transactions are frequent and critical to the organization, the organization benefits from trying to control them by incorporating them internally into the organization or creating more formal linkages to the other organizations involved. This theory has been used, for example, to examine the circumstances that lead some hospitals, such as those that are located in areas where long-term care arrangements are difficult to obtain, to seek vertical integration with home care programs and nursing homes to ensure the availability of support services or placement in long-term facilities (Chui, Hurley, and Chen 1993).

Variants of this argument, each with different assumptions about what motivates managers and workers and what are the impact and costs of monitoring and rewarding performance, provide slightly different perspectives on the same basic phenomena. For example, Miller and Chen (1994) introduced the concept of competitive inertia, defined as the amount of activity an organization must spend in activities like marketing or developing products to alter its competitive stance, in order to examine when and which types of strategic behaviors are undertaken. Wholey and Christianson (1994) use a model of spatial competition to examine the decisions of prepaid organizations to offer an open-ended product and to analyze its impact on the organization. Resource dependency arguments provide yet another version of when and why organizations seek to form links with other organizations (Baron and Cook 1992).

Opening the Black Box: Where Next?

These theoretical perspectives individually and in concert have made important contributions to our examination and interpretation of medical organizations during the past decade. Yet, as we argued earlier, the most important paradigm shifts and major evolutionary twists in cognizance are not due to the theoretical lenses we don but to the stimulus of increased complexity and rapid changes within what we are trying to observe: our health care system itself. In this context of trying to understand and predict some of the more interesting changes, there are several arenas in which organizational sociology applied to medical organizations can offer important insights and perspectives. In this sense, organizational sociologists can help open the black box of organizations to reveal how and why they react to and impact health care delivery by expanding and focusing on three areas of particular strength:

Attending to the levels and impact of organization. Some have remarked on the lack of recognition, that is, the theoretical invisibility, of formal and informal networks and processes within and between health care organizations and their broad impact on performance. One of the strengths of organizational sociology is its attention to the different levels of these networks, from doctor/patient dyads to industry-wide interactions and the multitude of internal and external processes which affect health care decisions and the effectiveness of performance.

There are, however, several areas where additional development and attention is needed. For example, we know very little about the impact of the increasing corporatization of the health care industry and the subtleties of applying profit-oriented strategies and managed competition at a multistate or community level. And, while numerous studies have demonstrated widespread variation in rates of using health care (for example, a hundredfold increase in hospitalizations for certain conditions if the patient lives in Boston compared to New Haven [Wennberg, Freeman, and Culp 1987]), the explanations of why these rates develop and persist are not well understood, especially with respect to the role of and consequences for organizations and their local communities. Organizational and system-level policies designed to expose and redress unfair distribution of health services and to promote efficiency and maximize quality are clearly well-intentioned, but what are the likely unintended consequences? We need good models to predict the impact of such variations on these communities and to comprehend the potential import of these variations when developing new policies.

In yet other areas, researchers (reviewed in Flood, forthcoming) have found strong associations between the effectiveness of health care provided and other organizational features (such as power of the medical staff, coordination, and type of ownership). Other researchers have attempted to determine the impact of multi-institutional arrangements. These efforts can nonetheless be best characterized as relatively crude studies of associations rather than sophisticated models of causal patterns and as being relatively outdated in their modeling and observations of the swiftly changing health care system. We need to better understand the impact of governmental policies and the effect of changing features of our health care system, particularly in areas where our simple models are inappropriately applied, such as models of managed competition in rural areas and inner cities.

Our current characterization of environmental influences and their impact is also fairly crude; for example, organizational sociologists have neglected to appreciate the self-interested and contradictory roles of various government and regulatory agencies and the extent to which they represent a limited perspective in evaluating and promoting efficiency and quality. Yet another area that has been neglected is the interplay between organizations and societal level factors in the delivery of health care. For example, major variations in rates of utilization between racial groups appear to be explained more by the hospitals where patients are treated than by differential treatment once hospitalized (Yergan et al. 1987). Gender differences in utilization of cardiac procedures provide a similar example. Understanding the impact of changes in our system on different segments of our society is in general an area which could greatly benefit from organizational theory and perspectives.

Analyzing evaluation and monitoring as social processes. "Money talks"—our models of health care organization are well-positioned to believe such aphorisms, which portray the power of financial incentives tied to performance that exist to reward and motivate behavior. But organizational sociologists have also served to emphasize the noneconomic and nonrational factors involved in evaluating health care and organizational performance. These models need to be expanded to fit the complexities of our health care system so that we can understand the inadequacies of financial-based policies. For example, we need a better appreciation of how to monitor and evaluate health care delivery so as to avoid counterproductive actions like gaming or manipulating the system to make performance look better without affecting quality. In examining these processes we again need to be cognizant of the different levels of organization. For example, we need better models of what happens when incentives at an organizational level (such as agreements between a group practice and a prepaid insurance company) are mixed (such as when the same group practice has different agreements for different sets of patients) and confounded (such as when the provider making the decisions at the patient level has an economic incentive to provide more rather than less care for the prepaid patient).

We also need to recognize that when policies are created to provide explicit incentives, they can backfire due to the reactivity to evaluations. For example, the government's policy to encourage charity in hospitals by making the amount of a contribution explicit as a condition of receiving Hill Burton construction loans backfired by inadvertently introducing a target amount of charity donations that then became the maximum beyond which organizations did not need

to go. Similarly, Medicare's policies to set reasonable prices based on averages wound up motivating some physicians to *raise* their low prices and encouraged hospitals to develop policies to discharge patients when their care had reached the average length of stay. To predict and potentially avert similar unexpected responses, new policies such as those which encourage the widespread adoption of continuous quality improvement as a philosophy and methodological approach to evaluation in health care organizations deserve the thoughtful attention of organizational theorists.

Portraying decision-making as a social process. A third area of particular strength for organizational sociology is the recognition of the complexity of perspectives and facets and motives and external factors which influence decision-making in health care delivery. We need to understand better the utility and disutility of rational models of decision-making and the strengths and limitations of acting with ambiguous and incomplete data. Many have proclaimed the importance of increased uniformity and continuity of information about patients, about the use of technology, and about the outcomes of care across multiple settings. The neglected side of this line of questioning would focus on different aspects of the sharing of information such as: What are the disadvantages in terms of privacy for individuals, strategic advantages for organizations, or the loss of mystique for the profession of medicine? Others still are calling for a new model of decision-making in medicine which recognizes the importance of patients' preferences for outcomes and styles of risk-taking; the impact of implementing such a model needs our careful examination.

Reflexivity of Theory and Change in the Health Care System

We should probably be more aware, too, of the ways in which the health care system, our theoretical paradigms, and our observations are reflexively interwoven. Our theories filter our observation of events and change processes, but those events themselves lead to redefinition and reconceptualization in our theories, and to shifts among paradigms. This brief section is designed only to raise questions about how the lenses of our theories change as a result of systemic changes in health care, and we do so without the benefit of a carefully analyzed history of our theories or a sociology of organizational sociology. However, the examples we raise below (which are neither exhaustive nor completely developed) are both speculative and enticing, and will hopefully help germinate continued examination of the other side of our glasses.

Models of organizational environments have changed drastically over the past two decades, and developments in institutional theory provide a ready example of how change in the health system has influenced development and refinement of those models. Of the various public sector institutions studied by Scott, Meyer and Rowan, Powell and DiMaggio, and others, the health sector has been most instrumental in the reconceptualization of organizational environments into technical and institutional forces. DiMaggio and Powell's important 1983 article uses the profession of medicine to good effect to illustrate normative isomorphism. More recent developments in institutional theory focus on how institutional norms and values themselves change over time, and Alexander and D'Aunno (1990) lead us to question how to model shifts in dominance between institutional versus technical pressures, again with primary reference to observations on health care organizations.

Similarly, models of organizational innovation appear to be undergoing a drastic shift in focus, from the organizational to the interorganizational and macrolevel of analysis (Scott 1990). The development of multi-institutional arrangements in health care for the joint adoption of expensive or complex new technologies seems to have provided key examples of that shift (Fennell and Warnecke 1988; Kaluzny, Morrissey, and McKinney 1990; McKinney, Kaluzny, and Zuckerman 1991; Renshaw, Kimberly, and Schwartz 1990). Those cooperative arrangements take on a variety of forms, from strategic alliances to joint ventures to networks, and the explosion in the number and variety of such forms has contributed to some rethinking in both population ecology and transaction-cost theories. Population ecology has now been somewhat reoriented to consider interorganizational connection as a type of organizational form suitable for ecological analysis (Alexander and Amburgey 1987; Baum and Oliver 1991).

This represents a significant redirection for a paradigm that was primarily developed and applied to analyze birth and death rates of discrete organizational forms. As we discussed earlier, the issue of organizational boundaries and the question "What is a health care organization?" are complicated issues with far-reaching consequences for both theory and observation. Similarly, the reduction of transaction costs are presumably one of the major reasons individual organizations agree to become involved in ongoing relationships with other organizations. But once the link is forged, neither organization remains as it was before; thus, the consequences of formalized linkage extend beyond transaction cost reduction to permanent structural change.

Finally, we should also note a significant parallel development in the bureaucratization of health care during the past decade—the growth of large HMOs and PPOs alongside the decline in the professional model and the "deprofessionalization" of medicine. Profound reformulation of our theories about professions (Abbott 1988; Halpern 1992; Light 1993) probably could not have occurred without the parallel developments in health care delivery, the medical profession, and the rise of other medical occupations and administrative experts to draw upon as observational fodder. We do not presume to argue that the observations led to theoretical change, but we do suggest that the two are inextricably linked.

Opening Pandora's Box: Reform and What Roles are Appropriate?

Recalling our analogy of prescription sunglasses, we now focus on the wearer of the lenses and ask if there is a role for organizational scholars other than that of passively observing events and processes through their lenses. In other words, should medical organizational theorists be content to describe and predict behavior, like classic views of the appropriate pursuit of the scientific method? Or is there a social science counterpart to the pursuit of basic medical scientific knowledge to develop improved technology to fight pathologies in the human body; that is, is there a greater role for organizational sociologists which beckons them to contribute new models and insights to enlighten policies to reform our health care system?

For organizational sociologists, health reform is often portrayed as a Pandora's Box containing a mischievous mess of pragmatists and charlatans whimsically conducting experiments based on half-baked ideas. Perhaps especially now, it is time to open this box to discover instead a wonderful experiment in large-scale organizational change, almost unprecedented in its scope and complexity. As a recent call for organizational theorists to gather together to brainstorm about their role put it:

> Reform threatens to have major effects on organizations both inside and outside health care. These include both macro implications (e.g., the design and process of building purchasing alliances, the problems associated with integrating medical care delivery across the continuum of care or different geographic settings) and micro effects (e.g., the implications of reform for rural health providers, the impact on community maternal and child health services, human resource management in the "downsized" environment, and declining professional opportunities for health care managers). (Academy of Management 1994)

The reasons for opening the box and joining the fray are worth the effort and confusion. Organizational sociologists have some special theoretical lenses which add new paradigms, lexicons, and observations to policy which are underutilized at present and which would add immeasurably to the dialogue of reform.

REFERENCES

Abbott, Andrew. 1988. *The System of Professions*. Chicago, IL: University of Chicago Press.

Alexander, Jeffrey A. and Terry L. Amburgey. 1987. The Dynamics of Change in the American Hospital Industry: Transformation or Selection? *Medical Care Review* 44:279–321.

Alexander, Jeffrey A. and Thomas D'Aunno. 1990. Transformation of Institutional Environments: Perspectives on the Corporatization of U.S. Health Care. Pp. 53–85 in *Innovations in Health Care Delivery*, edited by S. Mick and Associates. San Francisco, CA: Jossey-Bass.

Academy of Management. 1994. Electronic mail call for a special meeting to discuss health care reform at annual meetings: healthmgmt@ursus.jun.alaska.edu.

Baron, James N. and Karen S. Cook. 1992. Process and Outcome: Perspectives on the Distribution of Rewards in Organizations. *Administrative Science Quarterly* 37:191–97.

Baum, Joel A.C. and Christine Oliver. 1991. "Institutional Linkages and Organizational Mortality." *Administrative Science Quarterly* 36:187–218.

Berwick, Donald M., A. Blanton Godfrey, and Jane Roessner. 1991. *Curing Health Care: New Strategies for Quality Improvement*. San Francisco, CA: Jossey-Bass.

Bigelow, Barbara and John Mahon. 1989. "Strategic Behavior of Hospitals: A Framework for Analysis." *Medical Care Review* 46:295–311.

Boeker, Warren and Jerry Goodstein. 1991. "Organizational Performance and Adaptation: Effects of Environment and Performance on Changes in Board Composition." *Academy of Management Journal* 34:805–26.

Burns, Lawton R. 1989. "Matrix Management in Hospitals: Testing Theories of Matrix Structure and Development." *Administrative Science Quarterly* 34:349–68.

Chui, Herng-Chia, Robert E. Hurley, and Sheau-Hwa Chen. 1993. "Acute Hospitals and Extended Care Facilities: Alternative Approaches to Minimizing Transaction Costs." Paper presented to the American Sociological Association, Miami, FL.

Chulis, George S. 1991. "Assessing Medicare's Prospective Payment System for Hospitals." *Medical Care Review* 48:3–46.

Clarke, Lee and Carroll L. Estes. 1992. "Sociological and Economic Theories of Markets and Nonprofits: Evidence from Home Health Organizations." *American Journal of Sociology* 97:945–69.

Davis, Gerald F. and Tracy A. Thompson. 1994. "A Social Movement Perspective on Corporate Control." *Administrative Science Quarterly* 39:141–73.

DiMaggio, Paul and Walter W. Powell. 1983. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." *American Sociological Review* 48:147–60.

Dranove, David and William D. White. 1987. Agency and the Organization of Health Care. *Inquiry* 24:405–15.

Enthoven, Alain C. 1980. *Health Plan: The Only Practical Solution to the Soaring Cost of Medical Care*. Menlo Park, CA: Addison-Wesley.

_____. 1993. "Managed Competition." *Health Affairs* 12(Suppl.): 24–48.

Fama, Eugene F. 1980. "Agency Problems and the Theory of the Firm." *Journal of Political Economy* 88:288–307.

Feder, Judith, John Hadley, and Stephen Zuckerman. 1987. "How Did Medicare's Prospective Payment System Affect Hospitals?" *New England Journal of Medicine* 317:867–73.

Feldman, Roger, James Kralewski, and Brian Dowd. 1989. "Health Maintenance Organizations: The Beginning or the End?" *Health Services Research* 24:191–211.

Fennell, Mary L. and Jeffrey A. Alexander. 1987. "Organizational Boundary Spanning in Institutionalized Environments." *Academy of Management Journal* 30:456–76.

_____. 1989. "Governing Boards and Profound Organizational Change in Hospitals." *Medical Care Review* 46:157–87.

_____. 1993. Perspectives on Organizational Change in the U.S. Medical Care Sector. Pp. 89–112 in *Annual Review of Sociology*, vol. 19, edited by J. Blake and J. Hagan. Palo Alto, CA: Annual Reviews, Inc.

Fennell, Mary L. and Richard Warnecke. 1988. *Diffusion of Medical Innovations: An Applied Network Analysis*. New York: Plenum.

Flood, Ann Barry. 1993. "Organizational Issues and Perspectives in Quality Assurance." Pp. 39–50 in *Putting Research to Work in Quality Improvement and Quality Assurance*, edited by M.L. Grady, J. Bernstein, and S. Robinson. Rockville, MD: AHCPR.

_____. Forthcoming. "The Impact of Organizational and Managerial Factors on the Quality of Care in Health Care Organizations." In *Medical Care Review* 51(4).

Flood, Ann Barry, Allen M. Fremont, Elizabeth Goodrick, Kinam Jin, and Carolyn White. 1991. Pp. 127–37 in "Sociological Approaches to Examining Resource Use in Managed Care." In *Primary Care Research: Theory and Methods*, edited by H. Hibbard, P.A. Nutting, and M.L. Grady. Rockville, MD: AHCPR.

Flood, Ann Barry, W. Richard Scott, and Stephen M. Shortell. 1994. "Organizational Performance: Managing for Efficiency and Effectiveness." Pp. 316–51 in *Health Care Management: A Text in Organizational Theory*, 3d ed., edited by S.M. Shortell and A. Kaluzny. Albany, NY: Delmar.

Freidson, Eliot. 1970. *Professional Dominance: The Social Structure of Medical Care*. New York: Atherton Press.

Freidson, Eliot. 1987. "The Future of the Professions." *Journal of Dental Education* 53:140–44.

Freudenheim, Milt. 1994. "Health Industry is Changing Itself Ahead of Reform." *New York Times* 143, June 27, pp. A1, D4.
Gianfrancesco, Frank D. 1990. "The Fairness of the PPS Reimbursement Methodology." *Health Services Research* 25:1–23.
Halpern, Sydney. 1992. "Dynamics of Professional Control." *American Journal of Sociology* 97:994–1022.
Hillman, Alan L. 1987. "Financial Incentives for Physicians in HMOs: Is There a Conflict of Interest?" *New England Journal of Medicine* 317:1743–48.
Hillman, Alan L., Mark V. Pauly, and Joseph J. Kerstein. 1989. "How Do Financial Incentives Affect Physicians' Clinical Decisions and the Financial Performance of Health Maintenance Organizations?" *New England Journal of Medicine* 321:86–92.
Hyman, David A. and Joel V. Williamson. 1989. "Fraud and Abuse: Setting the Limits on Physicians' Entrepreneurship." *New England Journal of Medicine* 320:1275–78.
Inglehart, John K. 1991. "Efforts to Address the Problem of Physician Self-Referral." *New England Journal of Medicine* 325:1820–24.
Joint Commission on Accreditation of Healthcare Organizations (JCAHO). 1992. *Cornerstones of Health-Care in the Nineties: Forging a Framework of Excellence*. Sept. 16–18, Homestead, Hot Springs, VA.
Judge, William Q. and Carl P. Zeithaml. 1992. "An Empirical Comparison Between the Board's Strategic Role in Nonprofit Hospitals and in For-Profit Industrial Firms." *Health Services Research* 27:47–64.
Kaluzny, Arnold D., Joseph P. Morrissey, and Martha M. McKinney. 1990. Emerging Organizational Networks: The Case of the Community Clinical Oncology Program. Pp. 86–115 in *Innovations in Health Care Delivery*, edited by S. Mick and Associates. San Francisco, CA: Jossey Bass.
Kaluzny, Arnold D., Linda M. Lacey, Richard Warnecke, Denise M. Hynes, Joseph Morrissey, Leslie Ford, and Edward Sondik. 1993. "Predicting the Performance of a Strategic Alliance: An Analysis of the Community Clinical Oncology Program." *Health Services Research* 28:159–82.
Konrad, Thomas R. and Gordon H. DeFriese. 1990. "The Impact of Financial and Organizational Changes on Primary Care." Pp. 97–106 in *Conference Proceedings: Primary Care Research: An Agenda for the 90s*, edited by J. Mayfield and M.L. Grady. Rockville, MD: AHCPR.
Kusserow, Richard P. 1989. *Financial Arrangements Between Physicians and Health Care Businesses, Report to Congress*. Washington, D.C.: Office of Inspector General, Office of Analysis and Inspections, DHHS, U.S. Government Printing Office.
Light, Donald. 1993. "Countervailing Powers: The Changing Character of the Medical Profession in the United States." Pp. 69–79 in *The Changing Medical Profession: An International Perspective*, edited by F.W. Hafferty and J.B. McKinlay. New York: Oxford University Press.
Litwak, Eugene and Peter Messeri. 1989. "Organizational Theory, Social Support, and Mortality Rates: A Theoretical Convergence." *American Sociological Review* 54:49–66.
Long, Michael J., James D. Chesney, Richard P. Ament, Susan L. DesHarnais, Steven T. Fleming, Edward J. Kobrinski, and Brenda S. Marshall. 1987. "The Effects of the Prospective Payment System on Hospital Product and Productivity." *Medical Care* 25:528–38.
Longo, Daniel R. and Gary A. Chase. 1984. "Structural Determinants of Hospital Closure." *Medical Care* 22:388–402.
March, James G. 1994. *A Primer on Decision-Making: How Decisions Happen*. New York: Free Press.
Mechanic, David. 1991. "Sources of Countervailing Power in Medicine." *Journal of Health Politics, Policy, and Law* 16:485–98.
Messeri, Peter, Merril Silverstein, and Eugene Litwak. 1993. "Choosing Optimal Support Groups: A Review and Reformulation." *Journal of Health and Social Behavior* 34:122–37.
Meyer, John W. and W. Richard Scott. 1983. *Organizational Environments: Ritual and Rationality*. Beverly Hills, CA: Sage Publications.
Meyer, John W., W. Richard Scott, and Terry Deal. 1981. "Institutional and Technical Sources of Organizational Structure: Explaining the Structure of Educational Organizations." Pp. 151–79 in *Organization and the Human Services: Cross Disciplinary Reflections*, edited by H. Stein. Philadelphia, PA: Temple University Press.
McKinney, Martha M., Arnold Kaluzny, and Howard Zuckerman. 1991. "Path and Pacemakes: Innovation Diffusion Networks in Multihospital Systems and Alliances. *Health Care Management Review* 16:17–23.
Mick, Stephen S. and Associates. 1990. *Innovations in Health Care Delivery*. San Francisco, CA: Jossey-Bass.
Miller, Danny and Ming-Jer Chen. 1994. "Sources and Consequences of Competitive Inertia: A Study of the U.S. Airline Industry." *Administrative Science Quarterly* 39:1–23.

Miller, Robert H. and Harold S. Luft. 1994. "Managed Care Plans: Characteristics, Growth, and Premium Performance." Pp. 437–59 in *Annual Review of Public Health*, edited by G.S. Omenn, J.E. Fielding, and L.B. Lave. Palo Alto, CA: Annual Reviews, Inc.

Morrissey, Michael A. and Jeffrey A. Alexander. 1987. "Hospital Acquisition or Management Contract: A Theory of Strategic Choice." *Health Care Management Review* 12:21–30.

Nease, Robert F., Douglas K. Owens, and Yann B. Bonduelle. 1987. "Threshold Analysis using Diagnostic Tests with Multiple Results." *Medical Decision-Making* 7:284.

Powell, Walter W. and Paul J. DiMaggio. 1991. *The New Institutionalism in Organizational Analysis*. Chicago, IL: University of Chicago Press.

Renshaw, Laura R., John R. Kimberly, and J. Sanford Schwartz. 1990. "Technology Diffusion and Ecological Analysis." Pp. 181–206 in *Innovation in Health Care Delivery*, edited by S. Mick and Associates. San Francisco, CA: Jossey-Bass.

Rundall, Thomas G. 1987. "The Organization of Medical Practice: A Population Ecology Perspective." *Medical Care Review* 44:375–406.

Scheffler, Richard M., Dolores G. Clement, Sean D. Sullivan, Teh-Wei Hu, and Hai-Yen Sung. 1994. "The Hospital Responses to Medicare's Prospective Payment System: An Econometric Model of Blue Cross and Blue Shield Plans." *Medical Care* 32:471–85.

Scott, W. Richard. 1982. "Managing Professional Work: Three Models of Control for Health Organizations." *Health Services Research* 17:213–40.

_____. 1987. *Organizations: Rational, Natural, and Open Systems*, 2d ed. Englewood Cliffs, NJ: Prentice-Hall.

Scott, W. Richard and Elaine V. Backman. 1990. "Institutional Theory and the Medical Care Sector." Pp. 20–52 in *Innovations in Health Care Delivery*, edited by S.S. Mick and Associates. San Francisco, CA: Jossey-Bass.

Schmerling, Robert H., Thomas L. Delbanco, Anna Tosteson, and David E. Trentham. 1990. "Synovial Fluid Tests: What Should be Ordered?" *Journal of the American Medical Association* 264:1009–14.

Shortell, Stephen M. 1983. "Physician Involvement in Hospital Decision-Making." Pp. 73–101 in *The New Health Care for Profit: Doctors and Hospitals in a Competitive Environment*, edited by B.H. Gray. Washington, DC: National Academy Press.

Shortell, Stephen M., Ellen M. Morrison, and Bernard Friedman. 1990. *Strategic Choices for America's Hospitals: Managing Change in Turbulent Times*. San Francisco, CA: Jossey-Bass.

Shortell, Stephen M., Jack E. Zimmerman, Denise M. Rousseau, Robin R. Gillies, Douglas P. Wagner, Elizabeth A. Draper, William A. Knaus, and Joanne Duffy. 1994. "The Performance of Intensive Care Units: Does Good Management Make a Difference?" *Medical Care* 32:508–25.

Singh, Jitendra V. and Charles J. Lumsden. 1990. "Theory and Research in Organizational Ecology." Pp. 161–95 in *Annual Review of Sociology*, edited by W.R. Scott. Palo Alto, CA: Annual Reviews, Inc.

Sox, Harold C., Benjamin Littenberg, and Alan M. Garber. 1989. "The Resting ECG as a Screening Test: A Clinical Analysis." *Annals of Internal Medicine* 111:489–502.

Sloan, Frank A., Michael A. Morrissey, and Joseph Valvona. 1988. "Medicare Prospective Payment and the Use of Medical Technologies in Hospitals." *Medical Care* 26:837–53.

Starr, Paul. 1982. *The Social Transformation of American Medicine*. New York: Basic Books.

Thomas, James B., Reuben R. McDaniel, Jr., and Ruth A. Anderson. 1991. "Hospitals as Interpretation Systems." *Health Services Research* 25:859–80.

Topping, Sharon. 1991. "Hospital Closures: What is the Story?" *Health Service Management Research* 4:148–58.

Topping, Sharon and S. Robert Hernandez. 1991. "Health Care Strategy Research, 1985–1990: A Critical Review." *Medical Care Review* 48:47–89.

Treichler, Paula A. and Lisa Cartwright. 1992. "Introduction to Imaging Technologies, Inscribing Science, 2." *Camera Obscura* 29:5–17.

Updaw, Robert J. 1987. "Free-standing Emergency Centers and Ambulatory Surgery Centers." *Topics in Health Care Financing* 13:60–67.

Welch, W. Pete, Alan L. Hillman, and Mark V. Pauly. 1990. "Toward New Typologies for HMOs." *Milbank Memorial Fund Quarterly/Health and Society* 68:221–43.

Weiner, Bryan J. and Jeffrey A. Alexander. 1993. "Hospital Governance and Quality of Care: A Critical Review of Transitional Roles." *Medical Care Review* 50(4):375–409.

Wennberg, John E., Jean L. Freeman, and William J. Culp. 1987. "Are Hospitalized Services Rationed in New Haven or Over-Utilized in Boston? *Lancet* I(8543): 1185–89.

Williamson, Oliver E. 1975. *Market and Hierarchies: Analysis and Antitrust Implications*. New York: Free Press.

Wholey, Douglas R. and Jon B. Christianson. 1994. "Product Differentiation Among Health

Maintenance Organizations: Causes and Consequences of Offering Open-Ended Products." *Inquiry* 31:25–39.

Yergan, John, Ann Barry Flood, James P. LoGerfo, and Paula Diehr. 1987. "Relationship Between Patient Race and the Intensity of Hospital Services." *Medical Care* 25:592–603.

Ann Barry Flood is associate professor and director of policy studies at the Center for the Evaluative Clinical Sciences, Dartmouth Medical School, Hanover, NH. She is an organizational sociologist specializing in the study of organizational factors which effect quality of care, outcomes, and practice patterns in hospitals, outpatient care settings, and HMOs.

Mary L. Fennell is professor of sociology and community health at Brown University, and faculty associate with the Center for Gerontology and Health Care Research. She specializes in the study of interorganizational relations among health care organizations and change in health care systems.