Bureaucratic Flexibility:
Large Organizations and the Restructuring of Physician Careers

by

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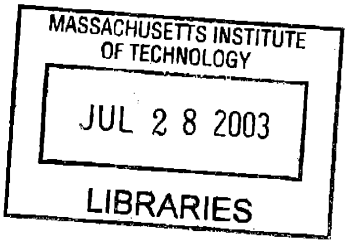

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This thesis contributes to theory and research at the intersection of professions, labor markets, and careers. To do so, it draws on longitudinal and cross-sectional data on physicians in different organizational arrangements. Physicians have been migrating into larger medical practice organizations over the past three decades, creating a valuable research opportunity. Previous writing on the professions and on careers implies that large, bureaucratic organizations constrain autonomy and are therefore anathema to professionals. Instead, I observe that many physicians find these larger structures to be *emancipating* because such organizations provide unique access to highly-valued career options.

These career options are possible because large organizations have scale and systems that address a fundamental temporal problem for doctors: availability whenever the patient requires attention. With a pool of substitutes for the individual physician, and systems that facilitate patient hand-offs, the large organization offers a predictable schedule and moderate hours when compared with traditional private practice. As a result, large organizations open up an expanded portfolio of career options, including part-time clinician, and facilitate transitions between different roles. These career options are greatly valued within the current physician workforce, particularly among the growing ranks of female physicians and those physicians in dual-career families.

The dissertation is organized into three papers. The first paper asks which types of physicians are employed in large organizations, testing two competing accounts from professions theory and careers research using national survey data. The second paper uses a longitudinal survey conducted by the author in order to investigate how different career options are utilized over time within one large medical practice organization. Finally, the third paper draws on detailed interview data from that same setting to document *how* the large organization enables schedule restructuring and, as a consequence, provides an expanded range of career options.

Taken together, this work contributes to a new understanding of professionals, one that emphasizes heterogeneity in career interests and the possibility of meeting those interests through individually-tailored careers *inside large organizations*. By neglecting this individual heterogeneity, we risk assuming that the movement of professionals into large organizations will result only in dispirited practice. In contrast, through the lens of career diversity, bureaucracies actually take on a liberating character for many doctors. Similarly, while the careers literature has emphasized the flexibility of independent practice arrangements, I find physicians to value bureaucratic employment precisely because it accommodates their temporal career interests.

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I would like to thank the many people who helped me through this project. As my committee chair and advisor, I am extremely appreciative to Tom Kochan. He somehow knew just what was required at various points in my journey: a kick in the pants, a helping hand, a pat on the back. He also provided the intellectual space in which a project such as this could be undertaken, encouraging the breadth of research traditions and methods that I have used to investigate the dynamics of a changing occupational labor market.

Lotte Bailyn also provided invaluable guidance and unflagging encouragement as I sought to bridge my home field of work and employment with topics in organization studies. Jesper Sorensen offered skilled advice on my analyses of careers and organizations. Paul Osterman gave useful direction and criticism at key points. In addition, Mike Piore, Rick Locke, and Bob McKersie of the Institute for Work and Employment Research (IWER) each influenced the thinking that went into this thesis. Ann Bookman and Mona Harrington of the MIT Workplace Center provided ideas and perspectives that also helped shape the project.

I am particularly grateful to Bob Konrad of the Sheps Center in Chapel Hill for offering guidance from the health services perspective, generously sharing his data and contacts, and brainstorming on the initial direction of my project. Without him, this project would simply not have been possible.

Undertaking a dissertation requires a supportive community as well as individual guidance. IWER and the Sloan School provided a mix of generosity and directed encouragement that allowed me to 'go off and do my own thing' without getting lost in the process. Equally important in this regard was the MIT Workplace Center. The Alfred P. Sloan Foundation, through the leadership of Kathleen Christensen, provided financial support for the Workplace Center and my dissertation. Center manager Susan Cass was crucial to many stages of my research, as were staff-members Jamie Browning and Cicely Dockett. Sharon Cayley at the Ph.D. office guided me through the whole process, and Jackie Curerri in IWER kept me sorted and sane along the way.

In the academic community beyond Sloan, an eclectic set of forces led me to this dissertation topic. Jim Maxwell and Peter Temin introduced me to the craft of survey research and the study of health care. As I progressed with my training, faculty and students in Harvard's Sociology department generously welcomed me into a cohort undergoing disciplinary indoctrination. Then as I considered thesis topics, Tim Hoff, Mary Fennell, Kathleen Montgomery and Michael Arthur played various key roles in developing my interest in professional careers.

Back at MIT, the dissertation benefited immeasurably from the input of many fellow travelers in management studies. Many of these colleagues have also become close friends. First on this list are Sean Safford and Isabel Fernandez, who along with Matthew Bidwell formed the core of a rewarding community for work and play. Other IWER students during my tenure, including Corinne Bendersky, Natasha Iskander, and Susan Eaton, contributed to my direction.

In taking the dissertation from an amorphous idea to ink on paper, nothing was more important than "Slump Management." This informal association of colleagues in Behavioral and Policy Sciences at MIT supplied the essential ingredients for dissertation survival: a sounding board for ideas, peer pressure to stimulate progress, and a weekly dose of group therapy. Along with IWER friends Sean, Isabel and Matthew, Slump co-conspirators included Andrew Von Nordenflycht, Sarah Kaplan, and Henrik Bresman. Kate Kellogg was also a wonderful colleague at the Workplace Center.

The generosity of harried physicians and administrators truly made this research possible. I offer my thanks to all the doctors at Health Care Organization (HCO), as well as the many others who I interviewed through the state medical society and other medical organizations. These individuals offered their time, reflections, and often very personal stories. It was their accounts of trying circumstances, conflicting commitments, and persistent aspirations that motivated me to write this dissertation.

My mother and father contributed to the thesis by being ever supportive and faithful doctoral parents. Thanks, Mom and Dad. My parents-in-law also played a unique role by providing a personal window into the changing medical profession. My friends, especially Dwight Wyatt and Nick Caramello, kept me ever mindful that life 'on the outside' has its up and downs as well. Finally, my wife Robin sustained me emotionally—and otherwise!—throughout these past five years. She refreshed my memory when I was having trouble recalling why I had undertaken a Ph.D. in the first place. And she directly shaped the thesis itself, through countless nights of brainstorming and editing.

CONTENTS

INTRODUCTION

Watershed changes are taking place in the economic and social composition of medicine. Women physicians, and dual-career physicians of both sexes, are entering the workforce in great numbers. These groups are experiencing time demands and role expectations stemming from their high family involvement, a factor that was less evident in the historically dominant model of a male physician with a homemaker wife. These new demands on many physicians create conflict with their occupational roles as providers of patient services. Of course, the medical profession has always required long hours and a schedule dictated in large part by the needs of patients. However, as a result of this new shift toward demographic heterogeneity, the traditional physician schedule and career arrangements are becoming ill suited to the workforce's diverse needs.

A second change is also underway in medicine, this one at the level of the organization. A broad transition is taking place from solo and small private practices toward larger medical practice organizations. These larger organizations curtail the work autonomy of individual physicians, and also dictate the terms of employment and working conditions to a greater degree than did the traditional practice. Physicians, who have been historically independent of organizational controls, are facing more intrusion into their work practices than at any previous time.

I argue that these two changes—demographic and organizational—are crucially linked in a way that is not obvious. Further, understanding this link leads to a revision of how we interpret the function of the large organization in the professions more broadly. The long literature on professionals and bureaucratic organizations has assumed that the two are often in conflict. This derives from the assertion that organizations cannot easily rationalize professional work, and

because professionals themselves are thought to dislike the curtailment of autonomy associated with organizational employment. The underlying assumption, therefore, has followed Weber's (1948) view of organizations as fundamentally constraining on individual behavior. This assumption has been carried forward into a newer literature on careers, where the large organization is still seen as a restrictive structure that narrows the options not just for professional work but also careers. Even when taking up the issue of work-family challenges, this literature has often assumed that professionals can gain flexibility by moving away from organizational settings into independent practice arrangements.

Yet large organizations actually play a key role in generating practice opportunities that meet the needs of the new physician workforce. These organizations actually *increase* schedule flexibility when compared to the alternative of independent practice. This inverted relationship arises from the fact that private practice physicians have schedules controlled not by their own preferences, but by their patients' needs. In contrast to the private practice, the organization can restructure work in ways that provide flexibility and control to individual physicians striving to meet their schedule and career needs. Organizations are thus seen by physicians not as categorically negative, but rather as part of a *trade-off* between work autonomy and schedule freedom. It is in this context that the bureaucracy can be liberating.

The following dissertation develops this argument through a multi-method research strategy focused on physicians in different organizational arrangements. The exposition is structured into three papers. First, I examine national survey data to describe the distribution of physicians in large organizational settings, finding a pattern consistent with the idea that some groups are choosing those settings in order to gain access to reduced work schedules. In the second paper I analyze longitudinal career data in one large medical organization to observe how

different individuals have used each career option—including part-time practice—over time, and what the consequences have been for those individuals. Finally, I use qualitative interview data to depict the processes through which the large organization restructures schedules and, hence, accommodates an expanded set of career options for physicians.

It is important to clarify that this dissertation is not about the quality or efficiency of medical services provided through organizations. While schedule and career options documented in the pages that follow derive largely from organizational systems that were intended to increase quality and efficiency, those outcomes themselves are not the type of data I collected. Among the medical community, serious questions remain regarding the impact of these organizations on the quality of health care. I focus, instead, on career and schedule issues in the physician workforce and the role of the large organization in addressing them.

This introductory chapter provides detail on the concurrent changes taking place in the medical workforce and organizational landscape. I then preview the major contributions of the dissertation to theory and to practice. Following that, I introduce my approach to research, methods and study design, and the structure of the dissertation that follows.

DISSERTATION CONTEXT

This study was prompted in part by dramatic changes in the medical domain. Two such changes that I argue are crucial to understanding contemporary physician careers are the rise of large practice organizations and the demographic transformation of the physician workforce. These trends are engendering a reconfiguration of the occupation, moving it toward greater heterogeneity among both individuals and organizations in medicine. Scholars have only just begun to attend to these forces and their wider implications.

These changes do not mean that physicians are likely to become 'just workers,' as some fear. Medicine is still a unique occupation characterized by the exceptional importance of practitioner expertise, the inherent vulnerability of clients, and the consequent market power that physicians wield. Even though physicians are experiencing more external pressure and scrutiny than in past periods of history, they still command a tremendous amount of importance and power in the labor market and society, and remain at the very top of the occupational wage distribution.[1] Yet a range of new dynamics is emerging as a result of the changes outlined below. The ensuing labor market structure is likely to include elements that are in common with a broad range of other occupations—as well as those that are unique to doctoring.

Change in medical organizations

Physician practice settings have been transformed in recent decades. In the earlier era, it was common for doctors to form solo practices or join small partnerships. In those settings, the logic of an individual physician's work and career was organized around the needs of patients. The doctor was on call for patient emergencies as they arose, day or night. As practices expanded, so would clinical responsibilities and hours. Other myriad responsibilities involved in running a small business would also take substantial time and energy. Over the entire career, the demands on a physician's time were relentless. (Starr, 1982; Laster, 1996).

Today, that image is much less common. Doctors just out of training are now more likely to be hired on as employees in an organization of some type. These include large medical practice organizations such as staff-model health maintenance organizations (HMOs) and large multi-specialty medical groups (Burns and Wholey, 2000; Bazzoli et al., 1999). These types of

[1] On average, physicians earned more per hour in 2002 than any other occupational category except for airline pilots (Bureau of Labor Statistics, 2002). Their mean earnings are well above those of lawyers or executive managers. However, the variance in those other occupations is greater, so that top-earning lawyers and executives earn more than top practicing physicians.

organizations grew steadily from 1960 to 1990 (Havlicek, 1999). This expansion was tied to efforts from government and employers—who together purchase the vast majority of health services—to increase efficiency and control over the health care system (Starr, 1982; Robinson, 1999; Maxwell et al., 1998). The growth of large organizations across a range of professions has been noted, and suggested reasons for this pattern include deregulation, competition, changes among clients, and changes in the nature of work (Brock, Powell and Hinings, 1999).

Accurate longitudinal data on physician organizational membership is difficult to find. According to the American Medical Association, the percent of physicians in groups with at least three physicians increased from 18% in 1970 to 33% in 1990 (Figure I.1). An equally useful statistic is the share of physicians who are employees. Alongside the growth in larger organizations, rates of salaried employment increased rapidly, from less than 24% in 1983 to 44% in 1997 (Figure I.2).

For the physician, working in a large-scale medical organization typically requires greater adherence to rules governing both work content and context (Freidson, 1970a). Those rules may include treatment protocols, clinical guidelines, drug formularies and restrictions of various sorts (Hafferty and Light, 1995). Physicians practicing in large organizations also tend to be subject to greater hierarchical supervision from clinical and non-clinical administrators. Physicians in the larger organizations still work long hours, but on average *fewer* than their colleagues in small private practices. Large-organization physicians also enjoy a predictable salary and relative job security. These relationships are documented and discussed in paper 1 of this dissertation using national survey data.

Note that the focus here is on large medical practice organizations as opposed to hospitals. The latter are institutions that most physicians have traditionally kept at arms-length

in terms of employment or contractual relations. Typically, physicians gained admitting privileges at a hospital, and might have served the hospital in various roles, but enjoyed freedom from any employment relationship or strict organizational oversight. Even hospital-based physicians would usually bill patients for their services through their own private practice entity that was legally separated from the hospital. (Physician-hospital relationships may also be in flux, but they are not the focus of this dissertation.)

Change in the medical workforce

One reason physicians may be willing to endure diminished discretion in the large organization is that recent cohorts of physicians have a new set of career norms deriving from changes in the workforce. The gender composition and family structures of doctors have shifted radically in the past three decades. The percentage of women among active patient care physicians grew from 7% in 1970 to 24% in 2000 (Figure I.3). Among young physicians (under 35) women grew from 10% to over 40% of active physicians (AMA, 2002). Similarly, the representation of women in medical school graduating classes rose from 9% in 1970 to 44% in 2000 (Figure I.3) (Barzansky et al., 1999). This increase in female physicians is occurring at the same time that the number of physicians is expanding as a share of the overall population, from 156 physicians per 100,000 population in 1970 to 261 per 100,000 population in 2000 (Figure I.4).

The division of household labor is also changing. Among doctors in the earlier era, the male breadwinner/female homemaker model was dominant. Powers and colleagues (1969) found that of male physicians who had graduated in the 1930s through the 1950s, 83% had wives who were not employed. Young physicians today are much more likely to marry or partner with individuals who also have demanding careers. In one recent study, 44% of female physicians

and 22% of male physicians had married other physicians (Sobecks et al., 1999). This dual-professional family structure places strain on the schedule and career timing of physicians that was less common in former times.[2]

These demographic changes could be increasing heterogeneity in the career values and interests within the physician workforce, and over time reshaping the core values shared among physicians of younger generations. Some research has found gender differences in career values around time issues and work involvement using representative population samples (Bartol, 1976; Betz and O'Connell, 1989), though other researchers found smaller differences when using more sophisticated controls (Rowe and Snizek, 1995; Tolbert and Moen, 1998). Gendered career values have also been documented in physician samples (Richardsen and Burke, 1990). Further, there is some evidence that men and women in recent cohorts of physicians may generally be more interested in family and lifestyle. One study of "Generation X" medical school graduates (born 1965 – 1979) found these physicians to be more oriented toward quality of life when compared to earlier cohorts (Moody, 2002).

Such a process of values drift could be self-reinforcing, through the activation of latent individual interests that were previously suppressed. If norms in organizations shift toward greater acceptability of career differences, in order to accommodate new expectations brought into the occupation by recent entrants, then other individuals who perceive this greater acceptance on the part of organizations may become willing to consider latent career interests that they previously submerged. This, in turn, could further force adjustments on the part of organizations and institutions.

[2] These trends in occupational sex composition and dual-career family structure mirror similar changes taking place across other professional occupations, including law, academia, and management (Waite and Nielson, 2001). They therefore should not be regarded as uniquely driven by some characteristic of medicine, but rather are part of the wider movement of women into the paid labor force.

I have outlined changes in the medical workforce that are leading to diverging individual interests, and changes in the organizational landscape that are moving toward larger scale bureaucratic structures. The ways in which these two emerging changes relate are only partially understood at this point. However, one such important link forms the basis for this dissertation: large medical organizations restructure schedules and thereby provide a degree of career flexibility that meets the needs of the changing physician workforce. The next section of this introduction outlines my approach to research, methods, and the thesis structure.

DISSERTATION OVERVIEW

Approach to research

In this dissertation, I have chosen to invest heavily in understanding the phenomenon of physician careers and organizations. This reflects the problem-centered nature of my training in the field of Work and Employment Relations. Scholars in this field have long argued that the most fruitful analyses of employment and work require an integrative approach that is grounded in real world issues as they are faced by individuals, organizations, and society (see Commons, 1921; Kochan, 2000).

I have also drawn on theory from more than one disciplinary area. In fact, Work and Employment Relations (or Industrial Relations as it has been known for most of its history) starts with the assumption that these phenomena cannot be adequately understood through any single disciplinary lens. Employment relationships, labor markets, and career systems are only partially captured through the separate approaches of labor economics, sociology of organizations and markets, or industrial-organizational psychology. In relative terms, I draw most heavily from scholarship with a sociological bent, including the sociology of work, organizations,

occupations, labor markets, and careers. In doing so, I have picked up on a point made recently that these domains could greatly enrich our understanding of the changing professions (Leicht and Fennell, 1997; Hoff, 2001a). However, my Work and Employment Relations background led to a particular focus on the organizational structures and labor market dynamics of the profession.

The dominant research tradition for studying physicians has of course been the sociology of professions. In some ways, this literature is quite compatible with the Work and Employment Relations paradigm. For example, scholars of work and employment assert that work is both meaningful and instrumental for individuals, an assumption that fits easily into the professions model where individuals are thought to internalize a strong sense of motivation and meaning in their work. However, I have not attempted to fit the medical profession into a generic employment framework that takes no account of its exceptional nature. Medicine continues to hold a unique position in the occupational system, notable for its high level of expertise, client service, labor market power, and social standing.

Methods overview

I take a holistic approach to the labor market and the career, emphasizing the active roles of individuals as well as organizations. I also maintain the importance of the professional context—the focus of so much earlier scholarship—in order to understand how attributes of the profession shape the interaction between organizations and individuals. Finally, I introduce the issues of family and gendered family roles, in the sense that these condition individuals' labor market and career interests.

I chose a multi-method approach, using a combination of original and secondary surveys, personal interviews, and archival material analysis. I first analyzed national cross-sectional

survey data on physicians; I then conducted a survey in one large medical organization, which I matched to both an earlier survey of those same individuals as well as the organization's own human-resource data. From this I constructed longitudinal data on career activities over time. I also conducted in-depth interviews with physicians and administrators over a 16-month period, many of which were linked to the organizational survey. Finally, I examined archival materials from the organization's founding to the present. Use of these multiple methods allowed a degree of triangulation on key points. The methods are described in detail in each of the three papers described below.

Structure of the dissertation

The dissertation is organized into three empirical papers, each of which was designed to be independently accessible to the reader. These are preceded by a literature review in which I critique the existing professions-centered approach to connecting professionals and organizations. I then sketch a different model of that relationship which emphasizes the role of individual heterogeneity and choice in the labor market, drawing on insights from labor markets and careers research. This literature informs all three papers, although each paper also includes a more focused review of relevant research. Table A provides a brief overview of the three papers.

Paper 1. The first paper asks whether evidence on labor market *selection* into large medical practice organizations is consistent with traditional professions theory—or with a career-based perspective, in which some individuals choose the organization to gain access to a reduced work schedule and different career options. In this analysis, I use secondary data from a 1991 cross-sectional survey of physician in the United States.

Paper 2. The second paper employs a more detailed approach to uncovering those schedule and career options in the organization. I focus on one large medical practice

organization, using a combination of survey and interview data. I collected longitudinal surveys that provide a picture of which physicians have sorted into different organizational positions and career activities over time, and with what consequences for these physicians in terms of subsequent satisfaction and income. Note that the first paper focuses on HMOs, and the second paper discusses 'large medical practice organizations.' The HMO is the most readily identifiable sub-category of large medical practice organizations, as well as the most formalized of organizations. Therefore it was the focus of my analyses in national survey data for paper 1.[3]

Paper 3. The third paper delves into the structure of the large organization to understand how *systems* in that same large organization function to generate schedule restructuring and expand career options. I identified these systems using in-depth interviews with physicians and administrators. They are organized into an analytic framework adapted from the classic literature on formal organizations. A brief concluding chapter summarizes the dissertation findings and the overall thesis contribution.

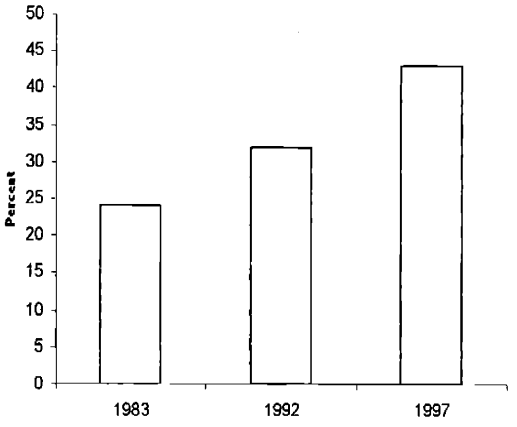
Each of these papers emphasizes a different dimension of the schedule-and-career construct that is at the heart of this dissertation. Paper 1 focuses on reduced-hours schedules and off-hours during nights and weekends, paper 2 on expanded career options such as part-time practice and physician-administrator, and paper 3 on schedule flexibility and control. While these different dimensions are in some contexts distinct, in the current physician context they are tightly connected through the medical organization's impact on schedule control. This point is developed in each of the papers and particularly the last of them.

[3] There is also a historical dimension to the HMO. In the 1980s, many of the largest medical organizations were 'integrated' HMOs that both provided health services *and* marketed health insurance under one roof. In the decade that followed, many split those two functions apart, into a practice organization and a separate health insurance business. Such was the case for the organization studied in papers 2 and 3 of the thesis (see Appendix 2.A for more details.) For most employed physicians this change did little to alter their day to day activities.

Table summarizing the dissertation papers

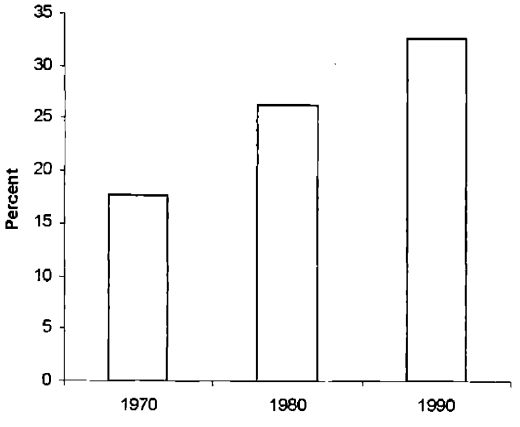
	Paper 1	***Paper 2***	***Paper 3***
	Labor market selection: Profession- and career-centered accounts of physician employment in large organizations	*Internal sorting: How physicians choose and use organizational career options*	*Organizational systems: How large medical organizations generate physician career options*
Research question	Which types of physicians work in large organizations, and how do jobs differ in them?	Do alternative career options in the large organization accommodate individual interests?	How do large organizations shape physician schedules and career options?
Research setting	Representative sample of U.S. physicians	One large medical practice organization	One large medical practice organization
Research design	Analysis of large scale cross-sectional data using regressions (n=2881)	Analysis of individual career orientations and subsequent career activities, using cross-tabs and regressions (n=183)	Qualitative analysis of organizational processes (n=37)
Data sources	Archival data from the 1991 Young Physician Survey	Original 2002 survey of physicians, matched to earlier 1987 survey data, 2002 in-depth interviews, and human-resource data	Personal interviews with physicians and administrators, archival document analysis
Key Findings	HMO job characteristics and employment patterns are consistent with physicians choosing this setting because of access to a reduced schedule (particularly women physicians). Employment patterns are *not* consistent with the forcing of lower quality or status physicians into HMOs because they lack other labor market alternatives.	Career options that deviate from full-time clinical practice—including part-time practice and physician-administrator—were commonplace in the organization. The pattern of use for these options reflected individual career orientations (measured previously). Further, the availability of these options contributed to overall career satisfaction, though it also played a part in generating income stratification.	The large organization restructures physician schedules as a result of a set of internal systems which were designed *not* for that purpose but rather to further goals of efficiency and effectiveness. However, these systems were identified by physicians as enabling them to have greater schedule control and, as a result, career flexibility.

Figure I.1: Percent of U.S. non-federal physicians who were employees, 1980-2000



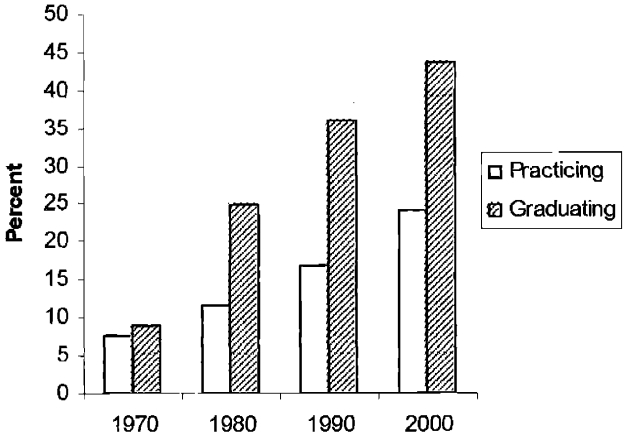
Source: Kletke (1998)

Figure I.2: Percent of physicians in group practices (3 or more physicians), 1970-1990



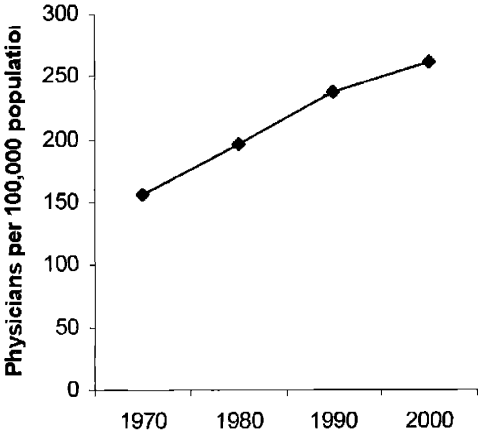
Source: Havlicek (1999)

Figure I.3: Percent female among practicing and graduating physicians, 1980-2000



Source: American Medical Association (2003), Barzansky and Etzel (2002)

Figure I.4: U.S. physician density per 100,000 civilian population, 1970-2000



Source: Lohr, Vanselow and Detmer (1996); Kaiser Family Foundation (2002)
Note: excludes non-patient-care physicians such as pure researchers

THEORY AND LITERATURE REVIEW

Overview

In this dissertation, I import ideas from the careers and labor market literatures into the sociology of the professions. In so doing, my intention is to shift the focus from an occupational level governed by professional norms to the individual level governed by career interests, including family factors. This literature review first summarizes and critiques the dominant approach of the professions literature, which has remained at the occupational level. I then leave behind the domain of the professions to introduce ideas from labor market sociology, careers, and work-family scholarship which are combined to form a model of the physician career and labor market with respect to the large organization. The resulting labor market model emphasizes choice over structure, an issue developed below. Although this model uses concepts from beyond the professions domain, it still crucially hinges on characteristics of the professional, a point also returned to at the end of the literature review. The following paragraphs summarize the overall argument.

In the many variants of professions theory, bureaucracy and professionals are seen as more or less incompatible. Yet the empirical reality today is that professionals are increasingly conducting their work as employees of larger bureaucratic organizations. Some scholars have interpreted this trend to reflect a loss of power on the part of professionals who would have wanted to stay independent but had little choice (Derber, 1982; McKinlay, 1982). A quite different perspective, however, can be brought to bear on the problem through a re-examination of the assumptions behind professions theory and the use of a more individual-based perspective such as that developed in the sociology of work (see Hoff, 2001a) and of careers (see Leicht and Fennell, 1997).

The first assumption in need of revision is that large organizations are in fact best characterized as constraining professional autonomy—and little else. Alternatively, large organizations might be associated with a range of job and career characteristics, with varied implications for the individuals working within them. The second, related assumption is that professionals themselves see large organizations principally or exclusively in terms of their constraining influence on individual autonomy and/or lower income. Instead, professionals can be viewed as a heterogeneous assortment of individuals, each of whom may place a different value on the job and career features associated with organizations. This suggests a shift of analytic focus from the occupational level to the individual level.

These two assumptions essentially each cover one side of the labor market. Relaxing them both opens up a more contingent perspective on the professional labor market process. This perspective provides for the possibility that some groups of individuals may favor working in the large organization while others would not. This sounds intuitive in the broad context of labor markets, but it represents a deviation in viewing the professions. One implication is that all professionals in bureaucratic organizations might not be seen as chafing under the constraints imposed on them.

In linking individual interests and organizational forms, I adopt a perspective from the recent careers literature that emphasizes the idea of choice and agency guiding labor market behavior. Further, I take basic propositions from the work-family conflict literature to be shaping those individual choices. In particular, because large organizations provide different job schedules and career opportunities when compared to the traditional private practice, these work-family factors may be activated in individual choices over organizational form. The resulting model, though based on individual choice, is not an atomistic distribution of individuals

responding blindly to price signals. Rather, new structural relationships emerge involving individuals, their family roles, and the organizational settings in which they practice. These are the principal subjects of the dissertation.

Bureaucracy and the theory of the professions

Starting with Weber (1947) and later developed by Merton (1952) and his students, a long literature has identified large organizations with rules and hierarchies that constrain individual action. A widely confirmed relationship was found to exist between organizational size and the elaboration of rules and structures which curtail autonomy (Blau, Heydebrand, and Stauffer, 1966; Blau, 1972; Marsden et al., 1996). At the same time, professionals were observed to have been notably successful in avoiding such large bureaucratic settings. This anomaly motivated a great deal of theorizing and empirical investigation over time in the sociology of the professions. Researchers initially considered whether professionals were simply incompatible with bureaucratic employment, since the importance of individual autonomy to professionals was assumed to create role conflict for them in organizational contexts (Goode, 1957; Ben-David, 1958; Hall, 1968). Scott (1965) found that individuals with more professional training (or orientation) were indeed more apt to be critical of the bureaucratic context, and of supervisors who rigidly adhere to organizational rules.

Several perspectives have been applied to the question of why professionals had remained independent of bureaucratic constraint. While not entirely unified, these arguments broadly fall within the theory of the professions. Parsons (1951) argued, as part of a macro system theory, that the economic organization of professionals into autonomous practices reflected an optimal way of arranging their services within society. Although this line of reasoning, along with Parsons' larger theoretical project, was later critiqued for being

tautological, later writers took a cue from Parsons in seeing the *nature* of professional work as a determinant of autonomous organizational arrangements (Freidson, 1970a: 97). Professional expertise was seen as difficult for non-expert supervisors to evaluate or regulate; therefore it inherently resisted the large bureaucratic structure (Barley and Tolbert, 1991; Zubofsky and Barley, 1996).

Merton (1982) proposed a view of professional economic organization that focused less on the problem of supervision and more on the problem of client trust. Picking up an argument made by Freidson (1970b), he suggested that the high level of autonomy enjoyed by professionals essentially constituted a social contract between professionals and society. Society required altruistic behavior on the part of professionals, and professionals were given individual freedom from bureaucratic or regulatory constraint in exchange for that altruism.

Another stream of literature focused on class conflict. Larson (1977) developed a theory of professional autonomy which suggested that professionals have been able to defend a position of privilege, free from bureaucratic supervision and external ownership, because of their collective power as a class. Abbott integrated elements of these various views in the *The System of Professions* (1988). He argued that the professions draw their power in society from their claims over expert knowledge, but noted that this power was not determinate but rather conditioned through a historical process of contestation between occupational groups vying for jurisdiction over domains of knowledge.

Apart from the functionalist view of Parsons, these various perspectives imply an underlying theory of individual motivation. For professionals to have avoided the spreading bureaucratic form of organization, they must have had both the means *and the will* to do so. In other words, beneath these arguments lies an assumed but often tacit concept of individuals

orientating toward autonomy. The variants of professions theory hold somewhat different reasons for why professionals hold the will to autonomy. Some such as Freidson (1970) emphasize the fact that professionals believe they require the freedom to exercise personal judgment in their complex work, and that without that freedom the quality of any professional work would be inferior. Others including Larson (1977) emphasize the possibility that professionals have pursued autonomy because it allowed them to preserve economic rents and status privileges in society.

The generation and maintenance of this autonomy orientation within the professional workforce has been described through the professional socialization process. Writing on socialization has counted autonomy among the key values that constitute the culture of professionalism (Leicht and Fennell, 2001). The earliest models of the professions listed characteristic traits, including strong autonomy (Carr-Saunders and Wilson, 1933; Parsons, 1937). Later scholars studied the lengthy training period, during which values were seen to crystallize and individual orientations become more homogeneous (Hall, 1948; Merton, 1957; Becker et al., 1961; Ondrack, 1975). This training and the interrelated professional context of medical associations and organizations constituted a highly institutionalized environment, one that had the effect of encouraging normative adherence by individual actors.

It is worth noting that the individual preference for work autonomy has been theorized and researched in a general way well beyond the context of the professions. In fact, it appears as a basic element in social-psychological models of general job satisfaction (Hackman and Oldham, 1975; Spector, 1997). Yet professionals, in particular, are thought of as strongly oriented toward autonomy (Goode, 1957; Freidson, 1970a; Wallace, 1995). Scott (1965) found

that those with more years of advanced training were most critically oriented toward their bureaucratic circumstances.

In fact, the centrality of autonomy to professionals led some scholars to ponder the negative attitudinal consequences of bureaucratization, such as alienation, dissatisfaction, and low commitment, for those occupations in particular (Rousseau, 1978; Miller, 1967; Wallace, 1995). These concerns were sharp for scientists and engineers, groups that were seen to be already substantially incorporated into large bureaucratic work organizations (Bailyn, 1985; Ritti, 1971; Raelin, 1985). Such concerns also run through debates about the extent of decline in professional autonomy and status (Derber, 1982; McKinlay and Stoeckle, 1988; Freidson, 2001).

Expanding our conception of professionals

I have highlighted one common denominator in scholarship on the professions: the persistent incompatibility of professionals with, and their ongoing aversion to, bureaucracy. Yet what if some professionals diverge from the archetypal image? The possibility that individual values and preferences are splintering within the professions has been raised in the past decade.[4] Leicht and Fennell (1997; 2001) argued that new gender and racial diversity in the professions may be producing divergence in terms of collective interests and solidarity, although they did not specify the mechanisms through which that might occur. Hoff and McCafferty (1996) argued for the importance of understanding *individual* motivations in professional work, and by implication the possible differences among individuals in their values and preferences. In a series of articles, Hoff (1998, 2001a, 2001b) has explored aspects of individual difference within the medical profession, including some associated with gender and race. Other recent research on physicians

[4] In a sense, Gouldner's (1957) early research on two types of professionals in a large organization presaged this perspective. He found one type to be essentially less oriented toward the wider profession and more oriented to the organization. Gouldner's types were not linked to extra-work roles as they are here, or to demographic characteristics, but they did suggest a divergent way of looking at the professions that never was developed further as the literature shifted to macro occupational and organizational forces.

has similarly emphasized individual differences in ways that contrast with the prevailing professions approach (Thompson and Van de Ven, 2000; Bunderson, 2001).

Perlow and Bailyn (1997) similarly critiqued the literature on the engineering profession for ignoring individual differences when analyzing the relationship between professional values and bureaucratic career structures. They write that "the tacit assumption underlying this picture is that engineers are essentially a homogeneous group. Such a perspective acknowledges no differences among engineers in the types of contributions they wish to make or the career paths they would like to pursue" (231). Perlow and Bailyn uncover different preferences, particularly associated with gender, that govern interest in job activities and career trajectories. Eaton (2000) also studied differences in the careers of scientists that reflected differing interests associated with gender. Studies of lawyers have similarly argued the need to model differences in career orientations (Gunz and Gunz, 1994).

In sum, a few scholars of professions and professional labor markets have recently attended to the *divergent* rather than convergent interests which shape job and career choices within the professions. This raises an important question: Which job attributes are most salient to individuals in their decision to pursue organizational work? In particular, which dimensions of work in large bureaucratic organizations are so attractive to some professionals that they are willing to accept a loss of autonomy in the process of joining them? The next section therefore considers the scattered theory and research on the other dimensions of work and career that large organizations might provide to professional workers.

Expanding our conception of bureaucracy

Over the years, a few researchers have explored ways in which large professional organizations may be systematically associated with generalized job and career characteristics

other than the constraint on individual autonomy. A starting point is the set of factors that result directly from greater scale. Engel (1969) found that large scale settings afforded professionals access to new technologies, because those technologies required large capital investments and were therefore only available in sizable organizations. In addition, organizations provided access to specialized colleagues who similarly required a sufficiently large client base to justify their membership within the organization.

Size also has been associated with various job and career structures, though the proposed explanatory mechanisms are more eclectic. The internal labor market system, identified by Doeringer and Piore (1971), was associated with large organizations which needed to retain their trained workers and therefore provided rigid career ladders that rewarded seniority. While originally described in the context of blue-collar work, the internal labor market was later also identified in office settings more typical of professionals (Osterman, 1984). In another early research stream, Kohn (1971) identified a series of what he called "occupational conditions" attendant on bureaucracy, including job security, higher income, and more-complex work. These empirical regularities were found in quantitative organizational data, although the precise mechanisms at play were not well established.[5]

Similarly, large organizations have also been associated with more developed personnel practices, including employment benefits, and more elaborated human resource departments. Dobbin and colleagues (Baron, Dobbin and Jennings, 1986; Dobbin et al., 1993) argued that these practices and structures arose as a result of the historical interplay of government policies and interest group goals. Large organizations are more visible to potential government regulators, which may make them more risk-averse and willing to grow departments and codify

[5] Kohn found these conditions to be in turn associated with psychological and attitudinal benefits to people working in bureaucratic settings—positive factors which he argued might offset Merton's (1952) generally negative assessment of the impacts of the bureaucracy on the individual.

policies that ensure stable relationships with regulators such as the Equal Employment commission. Larger scale was also found by Osterman (1995) to be associated with greater work-family benefits.

The *formalization* inherent in the large bureaucracy can also impact the work roles of individual professionals in complex ways, not just by constraining autonomy. Organ and Greene (1981) argued that there were "compensatory effects" of formalization for professionals working in large organizations. These included reduced role ambiguity and enhanced organizational identification, both of which served to reduce the overall role conflict experienced by professionals. More recently, Adler and Borys (1996) argued that organizational formalization should be seen in a contingent light, sometimes coercive in nature because of negative constraining impacts on individuals, and sometimes empowering of individuals by clarifying roles and facilitating task accomplishment.

Zucker (1991) argued that in many contexts large organizations function to provide resources that enhance the careers of individual professionals. "What motivates professionals, who have traditionally operated as individual or 'solo' practitioners, to join organizations? I argue that the value of bureaucratic hierarchies in such cases derives from the added prestige and resources that they can and do make available to individual professionals" (180). This is a much more "enabling" perspective on large organizations in contrast to the constraining role that was the focus on the earlier literature on bureaucracy. Zucker used the example of a university, suggesting that reputational advantages and network effects are gained by individuals in such settings. However, this constitutes perhaps less a theory of what size itself provides as much as what organizational status can provide in the context of large size.

Another set of organizational features, little explored in connection with professional work, involve work schedules and associated career options and flexibility. Could the large organization provide advantages in terms of schedule regularity or flexibility? In general, it is often large organizations, in the form of modern corporations, that are fingered for generating the longest of professional working hours (Schor, 1992: 68), most inflexible of schedules, and most rigid career hierarchies that lack the ability to accommodate differing individual needs (Kanter, 1977). This issue is at the heart of empirical investigation in the thesis.

The role of organizations in labor market allocation

Thus far I have argued for expanding our view of professionals to include *individual variation* in values and orientations toward work settings, and likewise expanding our view of large professional organizations to encompass a range of job and career features including work schedule and career options. How then are these individuals and organizations linked? I focus on external labor markets and internal organizational careers as the two domains in which these links take place. The *organization* lies at the center of both domains.

Over the past two decades, sociological writing on labor markets has brought the organization 'back in' to the model of how people get distributed into economic and social positions. Following Baron and Bielby (1980), much of this research has focused on the role of organizations in determining unequal economic outcomes for individuals. This perspective therefore de-emphasized the relative role of the individual worker in shaping labor market outcomes; the aim was an explicit shift in focus away from individual skills toward social structure. In short, organizations generate positions, each of which has a set of rewards associated with it, and organizations in turn hire and promote people into those positions based

on judgments of ability as well as more nefarious inferences using ascriptive characteristics or outright discriminatory tastes.

This literature has shown the importance of organizations as lead actors in the labor market process. I pick up this theme in modeling the professional labor market. Organizations generate professional jobs as well, after all, and influence the sorting of people into them from the demand side of the labor market. However, rather than focusing on the *push* role of organizations in this process, I emphasize their *pull* in the sense of shaping jobs that are more or less attractive to individuals who then act to choose them. This shifts the role of the individual from passive to active.

If professionals vary meaningfully in their interests with respect to jobs and careers, then this suggests a key way in which the proposed model of organizations departs from the dominant view in labor market sociology. In order to capture the importance of these differing interests, the new model needs to include not only a typology of individuals on the supply side of the labor market, but also the different job attributes that these individuals care about on the demand side. Further, it needs to capture the *origins of those job attributes in organizational structures, policies, and cultures*. Without doing this, the central role of organizations in generating jobs that match (or do not match) individual interests may be missed.

This contrasts with the prevailing approach in labor market sociology, which assumes away the importance of any variation in individual preferences that may relate to job attributes. The standard operating procedure in this literature follows labor economics in assuming that preferences vary randomly and un-problematically within the population, and that they can therefore be left out of the model. This approach is also adopted in many studies of gender stratification (e.g., Bielby and Baron, 1986; Reskin et al., 1999; Nelson and Bridges, 1999).

When individuals are included in the model, the stratification literature emphasizes their skills and abilities (Farkas and Vicknair, 1996; Reskin et al., 1999; also see Kerkhoff, 1993), not their preferences. Further, job attributes that extend beyond income or status are rarely operationalized in this literature either (but see Woodbury, 1983; Jencks, Perlman and Rainwater, 1988).

One tradition in labor economics has treated non-pecuniary job attributes as beneficial features that individuals would be willing to trade in exchange for lower wages. In this approach, observed wage differences associated with those job attributes are labeled compensating differentials; other statistical techniques have also been applied to estimate the willingness of individuals to pay for such job attributes. Yet in these studies individuals are still treated as a homogeneous mass with uniform preferences over those job attributes. Further, such studies rarely involve *organizations* even though organizations are the source of the job attributes in question.

I argue that organizations deserve a prominent location in any model of the physician labor market model for their role in shaping individual positions. Further, organizations generate jobs that not only have incomes attached to them, as is emphasized in the stratification literature, but they also carry a whole range of other work and career attributes that some groups of professionals may desire and others may not. The result is a more textured view of the labor market, one that puts a degree of structure on both sides of the market. Rather than a process that matches a mass of individuals with a mass of jobs, the labor market is composed of segments of individuals with different interests, and segments of jobs associated with different organizational forms, which combine in structured ways during the allocative process.

Individual choice and divergent interests

The research presented here focuses in on the role of choice on the supply side of the labor market. This approach has received perhaps the most attention in the careers literature. There, a movement has been afoot in the past decade or so to emphasize individual agency, highlighting the role of differing personal interests in generating career choices. Bell and Staw (1989), in the *Handbook of Career Theory*, critiqued the careers literature of the 1970s and 1980s for an over-emphasis on organizational and occupational socialization. They called for a greater focus on individual factors as determinants of career activities, and advocated a view that took individual agency into account.

Others later developed a more general individual-agency oriented view of careers. Reacting to the historical context of increasing labor market mobility in the 1990s, several researchers theorized about careers becoming more self-directed. Mirvis and Hall (1994) expanded on the theme from Hall's (1976) earlier work on 'protean careers' to emphasize a growing importance of individually-directed aspects of careers. Arthur and Rousseau's (1996) volume on 'boundaryless careers' greatly expanded on the idea that new career patterns are shaped more by individuals than organizations. Similarly, some researchers have argued that because organizations no longer provide stable career structures, the labor market for managerial professionals has shifted in a way that makes proactive individual choices more determinative of career outcomes (Cappelli, 1999).

Bringing the profession back in to the model

Choice is a particularly apropos concept to the context of the professions. Agency and choice may play a greater role in the process of individual allocation to labor market positions in professional labor markets, because individuals have relatively high degree of labor market

power emanating from the restricted supply of qualified individuals. As a result, professionals are more likely to have a set of workplace options from which to choose at any given point in their career. The sources of this labor market power are related to the structure of the professions, deriving from the high barriers to entry maintained by credentialing and limited slots in training programs, but also from the (related) cognitive challenges in acquiring medical expertise and skill.

The professions also shape this labor market model for a second reason deriving from the fact that they provide expert client services. Merton (1982) analyzed this service dimension from the perspective of what it implies for fidelity to clients. He argued that clients cannot easily evaluate the quality of a professional's work or effort, so they must trust the professional to act in an altruistic way and not abuse that client vulnerability. Yet the client-service dimension also gives rise to the high degree of *schedule strain* that is characteristic of professional work. Clients demand services in a timely fashion. In some professional occupations like medicine the timeliness of service can have dramatic consequences in terms of the quality of services rendered, even making the difference between life and death. Further, other practitioners cannot easily be substituted for the individual professional, since he or she often possesses key personal knowledge of the client.[6]

As a result, professionals' schedules are highly dependent on their clients and they endure a high level of personal schedule uncertainty, as well as typically long work hours. These schedule issues are therefore likely to be central attributes that professionals are interested in with regard to their work setting. Work schedule and career flexibility are of course factors for the general workforce when considering the attractiveness of employment options. But they are

[6] One might argue that social norms in medicine also play a role in shaping the responsiveness of individual physicians to patient needs. However, the nature of patient care as outlined above strongly necessitates such behavior regardless of social norms.

particularly important for service professionals who experience time pressure from the needs of clients; in this context they provide a powerful reason for individuals to prefer one work setting over another. Hours, schedules, and career options form the central attributes on which I model the professional labor market and career in this paper.

Work-family conflict and individual choice

Because of this time pressure arising from the nature of professional client-service work, a salient factor shaping professional behavior is likely to be work-family role conflict. Most research in this rapidly expanding literature assumes that an individual's psychic and physiological resources (including time) are limited and they therefore are challenged to allocate them between two competing spheres, those of work and family (Moen and Smith, 1986; Voydanoff, 1987). Resolving this conflict is conceptualized alternatively as a cognitive process involving an individual's rational choice among alternatives (England and Farkas, 1986) or a cultural process involving the impact of gender socialization on an individual's values (Moen and Smith, 1986).[7]

Whichever mechanism is envisioned, work-family conflict is thought to resolve itself more often for women in the direction of family and more often for men in the direction of work (Pleck, 1977). One influential explanation of this finding has coupled rational choice with assumptions about human capital investments to form a model of the household division of labor in which men specialize in paid work and women specialize in housework (Becker, 1985; Mincer and Polachek, 1974; Polachek, 1981). Other explanations rely more directly on cognitive or cultural processes, pointing to differential family constraints or gender norms experienced by

[7] Some researchers have argued that the work and family spheres need not always conflict. Rather, under some conditions or if properly organized, an individual's work and family lives might *enrich* each other (Bailyn, 1993; Rothbard, 2001). However, occupations where time and other work constraints are extreme may limit the scope for such expansive mechanisms. Such is the case of medicine, one of the most demanding "greedy institutions" in terms of time (Coser, 1974).

men and women. *The point for the purpose of the present research is that professionals' labor market choices can be influenced by their family circumstances and, through the gendered experience of work-family conflict, their sex.*

How does work-family conflict shape labor market decisions? Both the rational-choice and socialized-values channels outlined above have been developed in the literature. First consider the choice approach, which presumes the presence of stable individual preferences. Scholars have investigated whether reported job preferences systematically differ between men and women, with inconclusive results (see England, 1992). Bartol (1976) and Betz and O'Connell (1989) found gender differences in preferences concerning time and work involvement. However, others have found no marked differences when using more extensive controls in large-scale analyses (Rowe and Snizek, 1995; Tolbert and Moen, 1998). A stream of literature on occupational choice has pursued the idea that women pursue vocations based on preferences deriving from their consideration of what would be compatible with their family constraints and aspirations (Polachek, 1981; England, 1984). This literature has produced modest empirical results.

Hakim (2000, 2002) argued that among women, preferences differ over what individuals want from their careers and the labor market. Her 'preference theory' was developed to explain a perceived rise in voluntaristic labor market activities among women. She argued that a series of social and economic factors expanded the range of options for women and their control over those options: contraception, equal rights, the growth of white-collar jobs, and the "increasing importance of attitudes, values, and personal preferences in the lifestyle choices of prosperous, liberal, modern societies" (2002: 434). The preferences of women, in this view, are essentially viewed as prior to both labor market decisions *and* marriage and family decisions. While this

causal logic would be regarded by some as overly determinative, this theory nevertheless usefully directs attention toward the role of individual heterogeneity and choice in determining labor market outcomes.

Scholars have also pursued the socialized-values vein of thinking about work-family conflict affecting labor market behavior. In particular, there has been a focus on work commitment as an intermediate construct between an individual's family situation and his or her labor market and work behavior. Work commitment is seen to guide subsequent behavior, and empirical research has therefore tested whether work characteristics or family characteristics better predict work commitment. Bielby and Bielby (1984) reviewed this research, concluding that job features had much more explanatory influence than did family characteristics. Marsden, Kalleberg and Cook (1993) found similar results. They noted a gender difference in work commitment which appeared to be largely accounted for by the greater propensity of men to be self-employed.

From these generally mixed results in examining commitment and preferences, one might conclude that family factors and sex are not key determinants of preferences or attitudes governing work. Yet behaviorally we know that major differences exist. Women, much more than men, adjust their work around their family responsibilities (Gerson, 1985; Hochschild, 1989; Reskin and Padavic, 1994), including working part-time and leaving the paid labor force. Family circumstances directly predict labor market behavior, particular for women. For example, Hinze (2000) found in a study of dual-physician families that both the presence of children and the spouse's hours and income were important in predicting a physician's own hours and income. Mennino and Brayfield (2002) found family structure to predict reported objective trade-offs between job and family made by respondents.

What might explain this discrepancy? One possibility is that family-driven tradeoffs need to be examined in occupational context. The majority of commitment and preference studies have used representative population samples rather than occupational samples. This universalistic approach has the advantage of generality but sacrifices any consideration of how the particular nature of work in an occupation shapes the options for organizing that work (Barley, 1996). An alternative is to take a contingent approach in which some occupations are seen to involve particular *work processes that activate trade-offs between work and family* to a much greater degree than others. For example in professional occupations, strong temporal constraints exist deriving from the client service nature of the work. These constraints limit the job and career options available to workers, making work-family conflicts more salient and related preferences or commitments sharper.

While some labor market scholars focusing on work-family discuss the allocation of individuals into family-friendly jobs or reduced-hours positions in a general way, others place organizations as central actors in the process. Research on the demand side of the labor market has focused on the incidence of organizational policies that enable or inhibit the achievement of work-family balance (Glass and Estes, 1997; Bailyn, Drago and Kochan, 2001), and these various policies has been linked to workplace behaviors such as absenteeism and turnover (Dalton and Mesch, 1990). Less often have such structures or policies been empirically linked to employee selection in terms of how they attract to the organization different groups in the workforce who value them.

The current research seeks to link the two sides of the labor market, focusing not on organizations with work-family policies per se, but rather on job features associated with large scale organizations that are likely to be sought by those experiencing work-family tensions.

These features are hypothesized to be recognized in the labor market, and therefore influence the selective pursuit of employment in those settings by groups of workers who highly value them. In the medical occupation, this focus on organizational type is particularly salient because the organization strongly shapes schedule and career options (developed in paper 3 of this dissertation).

Putting it together: A model of labor market and career

Taking individual interests and choice seriously in professional labor markets does not imply a neglect of organizational structures on the demand side of the equation. To the contrary, an understanding of preference and choice also requires an understanding of the organizational settings in which those choices are presented and the manner in which they are bundled together. In particular, this thesis focuses on how different schedule and career opportunities are associated with the large-scale medical organization, and how individual physicians attend to those dimensions in their labor market and careers choices.

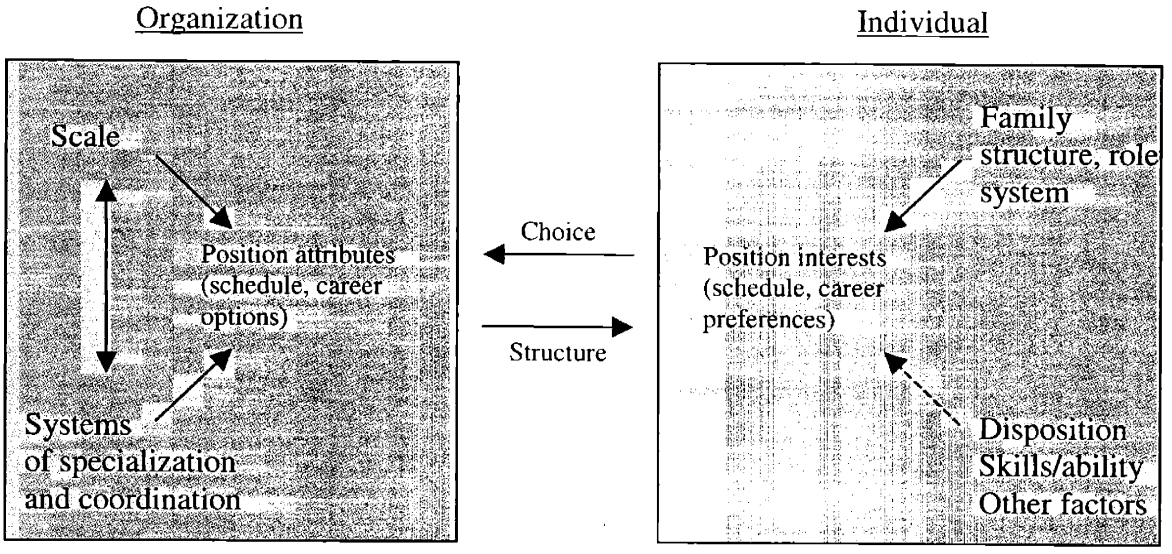
The emerging model of the physician career and labor market is one that accentuates some features and neglects others. Figure I.5 shows a stylized model of the labor market, highlighting the schedule and career dimensions that are focused on in this dissertation. Within the sphere of the organization (left-hand box), larger scale both enables and is dependent on systems of specialization and coordination. Scale and systems, in turn, play a role in determining the types of positions available in the organization and the attributes attached to them. The dimensions of positions that are of particular focus here are work schedules and future career options within the organization.

I focus on those schedule and career dimensions as they differentially attract some individuals more than others in the labor market. The dynamics of which individuals are sorted

into positions involve the interaction of supply and demand forces (center of diagram). However, the allocative mechanism emphasized here is individual choice more than organizational forcing. Moving into the individual side of the model (right-hand box), a range of factors are likely to shape the individual's interests with respect to the type of position he seeks. The focus here is on how family structure and household roles, including a gendered household division of labor influence those interests. Other factors, including individual dispositions and knowledge of one's own skills and abilities, will also shape those interests but are not the focus here.

The next three chapters are the core empirical contributions of the dissertation. Each of the three chapters is organized as a paper that can be read independent of the others. Summaries of the papers are provided above in Table I.1. The papers are followed by a brief overall conclusion which includes a summary of the findings from each paper as well as directions for future research.

Figure I.5: Stylized model of physician labor market highlighting schedule and career aspects



Paper 1

Labor market selection:

Profession- and career-based accounts of physician employment in large organizations

ABSTRACT

During the 1980s and 1990s, large salary-based organizations became more common settings for physicians, as opposed to the traditional solo or small private practice. This paper tests two theoretical approaches to understanding the labor market response to this phenomenon. The prevailing theory drawn on to understand physicians in large organizations is professions theory, in which an autonomy orientation is believed to bias doctors against such settings. The implication of this theory is that only low-status or low-ability individuals would be employed in large organizations. In contrast, the demographic transformation underway in the medical occupation raises the possibility of an alternative explanation involving the preferences of some individuals for different work schedules. In particular, women and those in dual-career families may be *choosing* to work in large organizations if such settings provide greater access to reduced-schedule conditions. These two accounts are evaluated using archival data from a national physician survey, and an alternative explanation involving employer discrimination is also considered. Results generally support the careers perspective, and no support is found for professions theory.

INTRODUCTION

This paper applies two different lenses, from professions theory and career theory, to the question of which physicians are practicing in large bureaucratic organizations. Professions theory represents the prevailing perspective on understanding the relationship between professionals and bureaucracy, but it requires strong assumptions about both sides of the labor market. Relaxing these assumptions, a task strongly suggested by changes in the professional workforce, allows for an alternative perspective. This alternative involves importing ideas from careers research, particularly those concepts rooted in individuals' work and family roles.

Applying professions theory to the question of which physicians join large organizations results in the expectation that lower quality or status physicians would be over-represented in those settings. In contrast, a career-based perspective suggests that individuals who experience greater work and family role conflict may seek out large organizations if they provided superior access to jobs that accommodated work-life balance. I test these two perspectives using representative data on physicians.

If it were the case that high-quality physicians are repelled by the large bureaucratic setting, then the trend toward larger medical practice organizations would appear troubling. The best prospective physicians might choose other occupations where they could retain autonomy, and existing high-quality physicians might pursue activities other than clinical practice in order to avoid such unfavorable organizational contexts. If instead, however, membership reflects preferences for work hours and schedules that are facilitated in the large organization, then the trend could be viewed as beneficial with respect to accommodating the interests of a changing professional workforce.

The findings provide no support for the professions theory perspective on membership in the large medical practice organization. While large organizations are more bureaucratic in terms of constraining autonomy, they do not appear to house lower-ability or lower-status individuals. Instead, several findings are consistent with the second theoretical approach which emphasizes individual career interests and work-family considerations in guiding organizational membership.

In brief, I find that large organizations involve reduced schedules; that women physicians are strongly over-represented in such settings; and that the pattern of hours and hours-preferences is consistent with the notion that individual schedule interests are guiding the labor market process. Further, while women are actually *uniformly* over-represented in large organizations regardless of family or other circumstances, among men the pattern of organizational representation is *contingent* on such factors. These findings are extended in a number of ways that provide support against several alternatives including employer discrimination and individual ability differences.

This paper contributes to research on professions and professional labor markets by emphasizing the role of individual choice and individuals' family circumstances in shaping their assignment to positions in the labor market. It also holds important implications for policy in suggesting an alternative interpretation of the movement of professionals into large practice organizations: that those organizations are not simply alienating enthusiasts of professional autonomy, but rather that they enable individual schedule and career preferences to be realized. Other important issues related to the quality of care and efficiency in larger medical practice organizations are not addressed here. Rather, the focus is on the career activities of physicians in joining or avoiding such organizational settings.

The paper proceeds with a discussion of how the professions and careers perspectives can be brought to bear on the question of organizational employment among physicians. Next I describe the phenomenon of the large medical organization in detail, focusing on the health maintenance organization (HMO). Following that, I outline the methods and data used in the analyses, and then proceed with my findings. The results section steps through a series of related expectations flowing first from the professions and then the careers perspective. I discuss the logic of each expectation and the findings on it together. Sub-sections on sex discrimination and various extensions are included. This is followed by a summary discussion and conclusion.

THEORY: PROFESSIONS VS. CAREERS

Professionals have long been thought to dislike bureaucracy (Goode, 1957; Hall, 1968). Theories of the professions use this assumption to motivate accounts of the relative success that professionals have had in avoiding bureaucratic work settings (Freidson, 1970a; Derber, 1982; Abbott, 1988). The archetypal occupation invoked in these accounts is medicine. Doctors were thought to be both averse to bureaucracy and, until recently, to have largely avoided it in practice. The organizational size distribution of medical practices was dominated by self-employed solo practitioners or small private practice owners (Starr, 1982; Burns and Wholey, 2000). Now, however, a small but growing share of physicians is employed in large medical practice organizations (Robinson, 1999; Havlicek, 1999).

According to professions theory, individuals are oriented against bureaucracy because it constrains their freedom (Scott, 1965; Hall, 1968; Leicht and Fennell, 2001; details in theory chapter above). Two assumptions underlie this perspective. First, professionals are assumed to be a homogeneous group who uniformly adopt professional values and who can therefore by

defined in part through their common interest in autonomy. Second, large bureaucratic organizations are assumed to be seen by individual professionals principally through their constraint on autonomy and assumed lower quality, and not other job or career features.

Following professions theory, if there is a generalized aversion in professional occupations to larger organizations, then we should expect those who *can* avoid the large organization to do so. If the highest-quality physicians have more labor market options from which to choose, then they are more likely to be able to avoid practicing in the undesirable large organization. Lower-quality physicians, in contrast, will have fewer labor market options and are therefore more likely to default to a position in a large organization. As a result, the pool of less qualified individuals should be over-represented in such settings.

Similarly, those who are of higher status, whether or not it is correlated with ability, should be more able to avoid socially undesirable positions in large organizations. Family class background, for instance, may impart to physicians a degree of status-privilege that would enable them to avoid such undesirable labor market outcomes. The mechanisms through which status might confer advantage are several, including access to hiring networks that may expand the set of labor market choices available to a physician.

An alternative to professions theory arises if those assumptions it invokes are substantially relaxed. In this case, large organizations would be viewed as systematically associated not just with curtailed autonomy but also with a range of *other job or career characteristics*. Secondly, segments of the professional workforce would be interested enough in those characteristics to overwhelm any distaste for curtailed autonomy and make the large organization an *attractive* practice option. Under these revised assumptions, the labor market

matching process would likely involve a more complex *voluntary selection* on the part of individuals into organizational forms such as the large bureaucracy.

What job characteristics might also be involved in the large organization? The focus here is on a reduced work schedule. Shorter work weeks, as well as more regular working hours, are made feasible through organizational scale and the associated internal systems that handle the flow of patient demand. For example, myriad time-consuming responsibilities involved in organizational administration, human resources, and physical plant are centralized away from the physician staff. Night and weekend hours—which are normally the result of patient needs during those hours—are handled by centralized services like an urgent care clinic.

These features allow a degree of schedule control that is ironically unavailable in the traditional private practice where physicians ostensibly have more generalized control over their work. These organizational schedule-restructuring mechanisms are the subject of paper 3 in this dissertation. Note that such factors provide the *potential* for shorter hours, not the functional necessity of them. Yet as long as some large organizations are providing reduced schedules, average hours in that sector will fall, and information about those fewer hours should influence labor market behavior at the margin.

Under these conditions, and the assumption that a degree of choice is possible by individuals in the labor market, we should expect individuals in large medical organizations to be disproportionately drawn from the pool of physicians who prefer a reduced work schedule. Research on work-family role conflict suggests that *women* professionals and those individuals in *dual-career* families are more likely to exhibit such preferences (Moen and Dempster-McClain, 1987; Lundgren et al., 2001; Wharton and Blair-Loy, 2002). This is particularly likely to be the case in medicine because of the exceptionally demanding work hours and schedules. In

surveys, physicians routinely report an average of 60 hours per work week (Hadley, 1991; Gonzales and Zhang, 1998).

This research focuses on two groups for which reduced hours are expected to be a priority: female physicians, and those of both sexes who are in dual-career families. The professional workforce—in medicine and many other professional occupations—includes many more of these two demographic groups than it did two decades ago (see introductory thesis chapter above). For example, the percentage of women grew from 8% to 22% from 1970 to 1999 (AMA, 2002), and in medical schools it grew from 9% in 1968 to 44% in 1998 (Barzansky et al., 1999). This provides a growing supply of individuals with potentially strong preferences over their work schedules.

Taken together, the two perspectives ask whether the physician labor market for positions in large organizations is guided more by *collective professional norms* or by *individual career choices*. On a theoretical level, the relative importance of these two mechanisms informs our view of professional labor markets more broadly: as exceptionally different from other labor markets, guided by professional norms and convergent value structures—or as a more individualistic domain not unlike that observed in non-professional occupations. Support for the professionalist perspective would suggest that collective norms still dictate individual behavior in medical labor markets. A lack of support for the professionalist perspective, on the other hand, raises the prospect of a shift in the rules that govern medical labor markets from an institutional to an individualistic format.

Support for the career perspective, as operationalized here, would suggest that individuals are guided in the labor market as choice makers who are influenced by their experience of role tensions and time constraints between their work and family lives. The work-family perspective

has received increasing attention lately in efforts to understand professional labor markets (Bailyn, 1993; Fuchs Epstein, et al., 1999; Barnett and Gareis, 2000). Yet this perspective has not been sufficiently incorporated into an understanding of how professionals see the *organizations* in which they practice. Support for this perspective would show the necessity of incorporating work-family into professional labor markets in order to understand the role of large organizations in those markets. Inadequate support for this perspective might call into question the importance of family roles or constraints, or suggest that other attributes of the large organization overwhelm any consideration of their reduced schedules.

Support for both perspectives is possible as well. For example, it may be that male physicians as a group orient toward the large organization using a professionalist norm and therefore the only men joining large practice organizations are those of lower quality—whereas women physicians as a group orient toward the organization using a career perspective, being attracted to the reduced schedules available, and therefore show over-representation in the large organization independent of their abilities. Another possibility, that discrimination in the hiring process shapes the allocation of physicians into large organizations, is also considered because it could also contribute to the over-representation of women in large organizations.

These two main accounts, one based on the professions and the other on careers, are evaluated below using data on physicians in a range of practice settings. The type of large organization that is the focused on the analyses is the health maintenance organization, described in the next section.

THE HEALTH MAINTENANCE ORGANIZATION

Perhaps the largest and most formalized medical practice organization is the salaried Health Maintenance Organization (HMO). At the time that these data were collected, the typical HMO employed physicians as salaried service providers. A spectrum of various other organizational forms and sizes existed across the medical landscape, including large private partnerships where physicians were owners, and smaller employment-based organizations. However, the fact that HMOs lie at the extreme end of that spectrum in terms of formal organization and size, and their widely recognized and unambiguous identity among physicians and the lay communities, make them an attractive group to examine in order to answer the question of which physicians are working in large medical bureaucracies.

The analyses below focus on comparing three distinct organizational categories: HMO employees, employees of medical practice organizations *other* than an HMO ("non-HMO"), and owners. Owners work in private practices held by themselves and sometimes other physicians. They represent the other extreme in terms of size and structure from the HMO, tending to follow the professional tradition (more below).

The advantage of this classificatory scheme is crispness. For some physicians, answering questions about the type or size of organization in which they conduct the majority of their practice activities is not straightforward. While solo practitioners are owners of their own one-person practices, many physicians practice in medium-sized groups which may have varying and complex ownership structures involving internal and external ownership. Those groups may also be affiliated with much larger organization such as a medical system, hospital, etc. Some confusion can also be introduced in distinguishing between the office in which a physician practices and the larger formal organization of which that office is part.

During the study period—the very early 1990s—HMOs represented the leading edge of a wave of organizational innovation which continues today (Bazzolli et al., 1999; Scott et al., 2000). Although HMOs grew in number and frequency during the years immediately following the data collection period, other organizational forms have proliferated and the nature of HMOs has changed. Many traditional HMOs which employed physicians on salary (many called "staff-model HMOs") separated their service delivery functions from their insurance and marketing functions, so that the physicians and the rest of the service delivery staff became employees of a separate but often quite similar organization called a large multi-specialty medical group. Other large medical practice organizations were acquired by various external entities, including hospitals seeking to channel more patients to them. From the perspective of classifying the organizations in which physician practice, this heterogeneity was problematic.

One disadvantage of using the classificatory scheme chosen here (HMO, non-HMO employee, owner) is thus the amount of heterogeneity hidden within the categories of non-HMO employee and owner. However, the next logical level of granularity in terms of organizational type—breaking out clinics, university settings, and state hospitals—produces many small-sized fragments while still leaving largely intact the two major categories of private practice employee and private practice owner. Another option, using organizational size regardless of type or ownership status, was investigated as well. The results of identical analyses using this scheme are presented in Appendix 1.A using a cut-point of 30 physicians to define a large organization. The findings are very similar to those presented using the HMO classification.

METHODS

The data used for these analyses come from the 1991 Practice Patterns of Young Physicians Survey (YPS). This is a publicly available survey of physicians from a single generational cohort. It includes 6000 physicians born on or after 1951 who completed residency in 1986-1989, selected from a simple random sample of the American Medical Association physician masterfile (Hadley, 1991). It also includes an oversampling of minority physicians. As a result, in all statistical analyses and regressions, weights devised by the survey authors were applied to correct for sampling strata and any resulting biases. All reported statistics reflect these weights, although they generally had negligible impact on the analyses presented here.

At the time of the survey in 1991, these physicians had an average age of 37, with a standard deviation of 3 years. Put another way, four-fifths (80%) of them were between the ages of 33 and 40. One quarter were female (24%), reflecting the gender composition of that cohort. Further, 86% of them were married, and 85% of those who were married had children of some age living at home. In fact, 69% of those who are married had children under the age of 6 at home. Therefore, a majority of the sample was in their late 30s and faced the twin challenges of demanding work and demanding family life.

The YPS is among the few large-scale surveys of physicians that include questions concerning family demographics, work preferences and characteristics, and organizational settings. These data are well suited to the present study in the sense that they are all from one cohort, which helps to control for the colinearity of cohort, gender, and family structure. Since

gender and family structure differ markedly from one cohort to the next, focusing on just one (in this case, baby-boomer) cohort helps to isolate the gender and family effect.[8]

The analyses presented here exclude hospital employees and medical school faculty, as well as government employees who tend to also be hospital-based (34% of the entire sample). The decision to exclude employees of these organizations was based on three factors. First, the hospital usually involves fundamentally different work activities involving research and teaching, making individuals in those settings less comparable. Second, the 'employment relationship' for physicians in these institutions has a long history of ambiguity. Like academic faculty, individual autonomy is much more institutionalized in hospitals than in most other organizational settings (Freidson, 1963; Harris, 1977). Therefore the general association of size with constraint on the individual is less likely to apply in these institutions.

Finally and most importantly, including teaching hospitals and medical schools in the analyses would have upwardly biased the ability and status scores of the large-organization group. This is because hospitals and medical schools are both dominated by the intellectual elite and are large in size. Had the analysis sample included these academic physicians, it would have artificially raised the ability scores of the large-organization category, thereby potentially counteracting any potential main effect of high-ability physicians deliberately avoiding the large organization. As a result, the restricted sample used in final analyses actually represents a more rigorous test of the professions perspective.

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[8] This "Baby-Boomer" survey population represents a transitional cohort between the "golden era of medicine" (McKinlay and Marceau, 2002) and a new era in which medical school graduates have no direct memory of that earlier time period. The baby boomer cohort included many women for the first time, yet the norms passed on to them in medical schools from elders were barely changed from the earlier era. Few senior mentors or role models existed for achieving career and family balance. Similarly, large numbers in this cohort had career spouses for the first time, but few models existed for balancing career and family in this context. This generation also was the first to graduate during the 'public health' era, exposed to new ideas about health maintenance and disease prevention.

The final dataset consists of a cross-sectional panel of 3784 individuals, of whom about half (49%) were employees rather than owners. Of the employees, about one in twelve (8%, or 233) were in HMOs. Organizational size differed systematically for these three categories. Owners practiced in organizations of very small average size. This can be seen graphically in Figure 1.1, where the log size of practice settings reported by owners was skewed toward the very lowest possible values. Table 1.1 indicates a median size of 2 for owners' practices, compared with 5 for non-HMO employees and 25 for HMO employees. Mean organization size followed the same pattern (though a few unlikely extreme outliers upwardly biased the owner average).[9]

The YPS includes linked data from the Student and Applicant Information Management System database (SAIMS) of the Association of American Medical Colleges. This includes separately-gathered information on Medical College Achievement Test (MCAT) scores, medical school application records, college Grade Point Average (GPA), and some socioeconomic information taken from application files. This information is superior to self-reported survey data because it represents official data collected directly by the professional association for purposes of evaluating quality and aiding medical school admissions decisions. However, these data were not available for all individuals. Therefore, sample sizes vary for the analyses presented below. (Where tests were conducted to evaluate the incremental improvement in model fit, equivalent samples were used.)

Finally, controls were included in all regressions for year entering the labor market (dummies for years, 1982-1989), age (dummies for birth years, 1950-1959), race (dummies for

[9] There appears to be a degree of measurement error in these self-reported size values because of the high complexity of medical organizations and physician affiliations. For instance, the fact that many HMO physicians reported organizational sizes below 50 suggests that they had in mind their office or department or team rather than the entire organization. Size figures were not relied on as the basis for the analyses presented below, though the raw size results are consistent with expectations, as shown in Appendix 1.A.

Black, Hispanic, Asian), geographic region (dummies for three of four regional U.S. Census divisions), and medical specialty (dummies for 12 of 13 major specialty categories). Descriptive statistics of these and all variables are reported in Table 1.3.

RESULTS: THE PROFESSION-CENTERED ACCOUNT

Autonomy of positions

In order for professional theory to apply, a first condition is for physicians practicing in larger organizations to report less autonomy and control. A widely studied and confirmed relationship exists between organizational size and the elaboration of rules and structures which constrain individual autonomy (Blau, Heydebrand, and Stauffer, 1966; Blau, 1972; Marsden et al., 1996). Several sociological and administrative studies have pursued this relationship and its implications for the medical occupation (McKinlay, 1982). Much, though not all, of this work in medicine has focused on hospitals. Medical practice organizations, in contrast, have received more limited attention, but they appear likely to also conform to this expectation.

Table 1.2 reports several indicators of autonomy in clinical activities for physicians employed by HMOs, those employed in other organizations, and for owners. Note that these indicators are relatively objective in nature; the questions ask about whether certain restrictive policies and practices exist in the organization. The results show a lower average level of autonomy for those in HMOs. Those in HMOs were more often required to follow clinical protocols. Protocols outline appropriate clinical steps, such as which tests to order, when a patient presents a particular symptom. Seventy-one percent of HMO respondents reported use of protocols, compared with 66% of non-HMO employees and 58% of owners. The reason many

owners also reported the use of protocols is likely due to the influence of health insurance companies with which they contract.

Similarly, physician decisions on a variety of matters appear to more often require approval or be subject to review in larger organizations. Table 1.2 shows consistently higher incidence of such factors for HMO physicians. This was the case even though the sample that was asked these questions was restricted to physicians in groups of at least 5 physicians, and therefore excluded those in the smallest practices where approval would assumedly be most infrequent.

Members of HMOs also reported lower annual incomes (on average $96,000 vs. $102,000 for non-HMO employees and $163,000 for owners). This is another factor that might lead higher-ability or higher-status physicians to be less inclined to pursue positions in these organizations.

Overall, then, these uncontrolled comparisons suggest that positions in HMOs on average involve lower autonomy as well as lower annual income. While these effects are not overwhelming, they appear to be consistently in the expected direction and are statistically significant. According to professions theory, these differences should make the HMO broadly distasteful in the physician labor market, biasing individuals against employment in such settings.

Ability and status of physicians

I have argued that if professions theory obtains, then HMO membership should reflect the greater relative success of high-ability or high-status physicians in their effort to avoid such settings. Tables 1.4A and 1.4B report on regressions using several different measures of individual ability, educational status, and family background. These measures were used as

indicators of objective ability or, in the case of family background, access to resources that might enhance perceptions of individual quality.

This and all subsequent regressions used maximum likelihood estimators to model the probability of an individual physician being in an organizational setting, using a dichotomous dependent variable. The valence of the coefficients was set to have an intuitive interpretation, so that for example positive coefficients indicate an increase in the probability of practicing in an HMO setting. All regressions include a full set of controls.

Table 1.4A shows the results of regressions on the probability of being in an HMO. In order to assess the utility of the ability and status indicators, table 1.4B shows the results of parallel regressions run on the probability of reporting a primary practice as a medical school faculty. The assumption here is that higher ability and status physicians should be found among medical school faculty, and therefore the indicators should show significance if they in fact capture the intended constructs.

The first set of regressions in Tables 1.4A and 1.4B (model 1) test for the influence of science MCAT scores on organizational affiliation. The expectation for this case would be that physicians with higher scores would be less likely to be HMO members (and more likely to be medical school members). The results indicate that while those practicing in medical schools have clearly higher MCAT scores (significant at the 0.01 level), those practicing in HMOs do not statistically differ from their counterparts from other settings. This remained the case after the science MCAT variable was interacted with gender to test for independent effects for men and women. Regressions using overall MCAT scores as opposed to science MCATs (not shown) produced the same outcome.

The second set of regressions (model 2) similarly tests the impact of science GPA on organizational membership. The expectation was similar to that for MCAT score. Here again, science GPA was positively associated with medical school practice (0.001 level) but not with HMO practice. The non-finding for HMOs remained after interacting science GPA with gender.

A third set of regressions (model 3) used the number of times that a physician had applied to medical school as a proxy for individual quality. The expectation here was that physicians who had applied more than once should be over-represented in HMOs (and under-represented in medical school practices). The results indicate that multi-year applicants were negatively associated with working in a medical school (0.001 level). However, no statistical relationship to HMO employment was found.

The fourth and fifth sets of regressions tested the impact of status measures on HMO employment. Model 4 shows the impact of coming from a foreign medical school on HMO membership. Foreign medical school graduates are often considered lower status in the medical community, a fact indicated by the use of foreign medical graduate ratios as an indicator of residency program status (Vagelos, et al., 2002: 42). The expectation was that those coming from foreign medical schools would be of lower average quality (real or perceived by the medical community) when compared with those from domestic schools. Foreign medical graduates were less likely to be practicing in medical schools (0.001 level). However, instead of being over-represented in HMOs, the regressions indicated that foreign medical graduates were actually statistically *less* likely to be HMO employees (0.01 level). After interacting foreign school status with gender, this effect appeared to be driven by male physicians in the sample.

The final set of quality/status regressions (model 5) evaluated the impact of parents' socioeconomic class on the likelihood that the focal physician is in an HMO or medical school.

Parents' class was self-reported in the survey using a 5-item scale with 5 being 'upper class.' The expectation was that physicians from higher class backgrounds would be less prevalent in HMO settings (and more prevalent in medical schools). No support for this view was found in the HMO regressions, even after the variable was interacted with gender. In fact, in the interaction model, male physicians' class status was *positively* associated with HMO employment at the 0.10 level of significance. However, class was not significantly associated with medical school either, casting possible doubt on the efficacy of the self-reported class variable as a measure of access to preferential labor market positions. Separate regressions were also conducted using a variable indicating whether the physician had one or both parents as physicians, also with no significance (not shown).

In sum, the evidence available from this dataset does not appear to support the contention that lower-quality physicians are found in the larger organizational settings. In fact, a few pieces of evidence—men from high-class families and foreign medical graduates—point in the opposite direction, toward HMOs counting higher-quality individuals among their ranks. The safest conclusion from these large-scale, nationally representative data appears to be that observable quality and status characteristics are not associated with HMO membership.

RESULTS: THE CAREER-CENTERED ACCOUNT

Reduced schedule

The careers perspective proposed above suggests that reduced schedules are influencing employment in the HMO setting. Returning to Table 1.2, the following section first investigates the extent to which these organizational types vary in terms of hours and schedule. The hours of physicians in HMOs appeared to be markedly lower than those of non-HMO employed

physicians, whose hours are in turn lower than those of owners. Table 1.2 shows average hours for those in HMOs at 49.6, compared with 55.6 for non-HMO employees and 61.3 for owners. Because a minority of physicians (about 10%) reported practicing in more than one organizational location, mean hours are also presented for just the main practice, showing similar results (48.3, 53.0, and 60.0 hours respectively). Median values reflect the same pattern (50, 55, and 60 respectively). The differences between HMO and non-HMO employees, and between non-HMO employees and owners, were all statistically significant at the 0.001 level.

Respondents were also asked about the number of hours they work nights and weekends in their main practice. The exact definition of night and weekend was not provided, so these figures may have a degree of measurement error in them. Nonetheless, they follow the same pattern. HMO physicians indicated an average of 7.7 night/weekend hours, compared with 8.9 for non-HMO employees and 11.6 for owners. The difference between HMO and non-HMO employees was not statistically significant, but that between non-HMO employees and owners was. This measure is correlated with total hours as a result of the simple fact that any hours over the first 50 are likely to have to fall during nights or weekends. Nonetheless, it still tells a part of the story of the schedule conditions associated with work in different organizational settings.

These average hours figures reflect a wide underlying distribution within each organizational setting. Therefore, the portion of physicians working a moderate-hours week was also examined. The rate of physicians working less than 40 hours per week was significantly greater in the HMO setting, at 33%, compared with 20% for non-HMO employees and 12% for owners. These HMO/non-HMO and non-HMO/owner differences were significant at the 0.001 level.

Finally, it is worth noting that when individual income is adjusted to take into account differences in weekly work hours (and annual weeks worked), the HMO income gap disappears. Hourly income is no different for HMO employees than non-HMO employees, although owners reported higher hourly incomes. These raw figures do not control for specialty, which is strongly related to income.[10]

Gender of physicians

More women than men may be expected to prefer reduced work hours because of either strong household gender norms (Pleck, 1977) or greater benefits to the household of their specialization in parenting work (Mincer and Polachek, 1974). For women currently in families, these roles result in a greater strain on their time compared with men in families. For women not in families but expecting to be so engaged in the future, gender roles may already be enacted in a form of anticipatory socialization. Women physicians do, in fact, work fewer average hours (Powers et al., 1969; Hinze, 2000). Given these different apparent preferences, the potential availability of better schedules in the large organization should lead more women to pursue employment there.

Women are clearly over-represented in HMOs relative to other settings, forming 40% of their ranks compared with 29% of non-HMO employees and 18% of owners (differences significant at 0.001 level). However, several spurious factors may influence these unadjusted means. For example, women disproportionately choose primary-care specialties that are likely to practice in larger organizational settings, artificially correlating gender and organizational size. Women in any sample of physicians will also be disproportionately from more recent graduation years, and if graduates from these more recent years also faced a labor market with fewer private practice opportunities then this would also cause some 'spurious' correlation between gender and

[10] For more extensive analyses of income using these data, see Baker (1996) and Sasser (2001).

organization size. This effect should not be overwhelming, since the survey sample was all from one cohort of 1980s graduates.

Table 1.5 shows that even after controlling carefully for age and specialty, as well as several other factors, gender appears to remain associated with HMO membership. In the sample of employee physicians (excluding owners), women are significantly more likely to be in HMOs. The odds ratio for women compared to men is 1.47, suggesting that the odds of a woman being in an HMO are 50% greater than for a man, after accounting for controls. For the full sample (model 3), the odds ratio is 1.98, making women twice as likely to be in HMOs. These findings holds even after controlling for individual ability using the two most compelling measures, MCAT and GPA scores (and for the other measures, although the sample size drops due to missing data). Models 2 and 4 show that with these controls included, sex remains significant with a similar odds ratio, and ability variables add nothing in terms of coefficient significance or model fit improvement.

The results for several control variables in Table 1.5 are of note. First, physicians entering the labor market in later years appear to actually have had a reduced likelihood of working in HMOs in 1991, after controlling for sex (which is correlated with labor market cohort year). This labor market variable appears to have been more important than birth year (age) in determining HMO membership. Second, blacks were much more likely to be HMO employees (this subject is taken up below). Third, men in the Western region of the United States had a greater chance of being HMO members, although this was not the case for women.

The sex difference in HMO membership can be extended by examining it in the presence of various family conditions. If the reason women are more likely to be HMO employees is related to their perceived work-family role strain, then we should expect to see the gender gap

widen as family strains increase. One such factor that is observable in this dataset is the number of children. When the sample is restricted to only those with large families—three or more children—the impact of sex on HMO employment increases. Using the same controls and regression strategy on the subset of physicians who fit this restriction (23% of the sample), the coefficients and odds ratios increase substantially to 2.88 in the employee sample and 3.00 in the full sample (n=543 and n=1344 respectively; results not shown). However, regressions that interacted sex and children were not significant, and regressions using two children as the cut-point did not behave similarly. Therefore, a safer conclusion from these data is that no clear relationships exist for this cohort data relating family size and the likelihood of HMO employment.

Spousal status of physicians

Following a similar logic, spousal status may also be expected to influence individual schedule preferences and hence organizational setting. Life-course theory has illuminated ways in which spousal careers may impact the focal individual's own career activities (Moen and Dempster-McClain, 1987; Han and Moen, 1999). In particular, those whose spouses work under demanding schedules may experience greater time pressure in terms of fulfilling household and parenting roles. The most extreme instance of this is a spouse who is also a physician, with the associated long and inflexible hours. Therefore those individuals whose spouses are physicians may value more highly the hours and schedule advantages of large organizations, and seek employment there.

These spousal effects may not manifest uniformly across both sexes. However, whether effects are likely to be greater for men or women is indeterminate. On the one hand, if women's household gender roles are strong enough women may be expected to prefer reduced

schedules—and HMO settings—at a higher rate irrespective of their spousal circumstances. In this case, analyses among men should show a greater sensitivity to spousal status than women. On the other hand, men's roles as providers—or professionals—may be strong enough to overwhelm any family consideration for them. If this were the case, women would show a greater sensitivity to spousal status. In other published research, the hours (and income) of women physicians have been found to vary with spousal circumstances much more than those of male physicians (Tesch et al., 1992; Sobecks et al., 1999; Uhlenberg and Cooney, 1990: 376). Here, of course, we are looking for effects with respect to large organization employment.

The regressions in Table 1.6 examine these spousal effects separately for men and women. When considering these results, it is helpful to keep in mind that the great majority of this sample is in their mid to late 30s, and married with young children. As a result, these physicians are at a point in the life-course where they are likely to be striving to establish themselves in their practice, and also have pressures at home related to young children.

Spouse's time pressure was operationalized with a dummy variable for whether the physician's spouse was also a physician. A spouse in the medical occupation, with relatively demanding and inflexible hours, should increase the likelihood of the focal physician being an HMO employee because they feel greater time pressure and role conflict. The results suggest that for men the impact of having a physician spouse increases the likelihood of being an HMO employee. The magnitude of this effect is substantial, yielding an odds ratio estimate of 1.65 (coefficient significant at 0.10 level). For male physicians, then, spousal effects emerged while for women there were no effects.

On the other hand, the effects of spousal *earnings* might be quite different. A spouse earning high compensation may enable the family to 'buy time' through the procurement of

time-saving services like nannies, thereby alleviating the pressure to work a reduced schedule in an HMO setting. In this case, greater spousal income would decrease the likelihood of working in a large organizational setting. This effect should therefore move in the opposite direction of the spousal occupation effects tested above.

To evaluate this claim, logged spousal income was derived from survey questions asking about the focal physician's income and their contributing share of total family income. Specifically, spousal earnings were calculated to be: [respondent's earnings] * [100 – respondent's % contrib. to family income] / [respondent's % contrib. to family income]. Some measurement error is likely to be introduced because spousal income was not measured directly. The results show that for male physicians, higher spousal income does in fact reduce the probability of HMO employment (0.05 level). Again, there were no effects for women.

These spousal effects were not only stronger for men than women, but for women actually *no* dimension of spousal circumstances predicted HMO employment, and the regression model showed no improvement in fit with any of these factors included. In contrast, for men the model fit was significantly improved (chi-squared change of 8.6, significant at 0.05 level). Similar results were obtained using various permutations of the spouse's percentage contribution to family income.

Hours and hours-preferences of women and men physicians in HMOs

If the mechanism through which women came to be overrepresented in HMOs involves reduced hours in those settings, then we should expect hours for women in HMOs to be lower than those for women in non-HMO settings. Table 1.7A shows the weekly work hours for respondents within each of the three organizational settings, by gender. Among women, hours ranged from 43 in the HMO to 46 in non-HMO employment settings to 52 for owners in private

practice settings. Men's hours similarly ranged from 52 in HMOs to 56 in non-HMO employers and 62 among owners. Least-squares regressions with controls indicate an even larger HMO effect on hours. Table 1.8 shows that among women, HMO employees worked 5 fewer hours per week (sig. at 0.05 level); among men, HMO employees worked 5½ fewer hours (sig. at 0.01 level). For both men and women, these organization-type variables significantly improved model fit, increasing R-squared values by 4% and 5% respectively.

These results suggest that women in particular gained access to significantly reduced schedules in the HMO. Using the intercepts in Table 1.8, average hours for women with default characteristics on all control variables were 43, but they dropped to 38 if they were employed in an HMO. Thus the HMO appears to play a role in women's access to positions that drop below the 40-hours threshold. This effect can also be seen in Table 1.7B, which indicates the portion of respondents working 40 or fewer hours per week. Fully 44% of HMO women worked 40 or fewer hours, compared with 39% of non-HMO women and 28% of owner women. Among men, the figures are 26%, 13% and 9% respectively.

Table 1.7C shows the night and weekend hours reported by men and women in these settings. The results generally follow a similar pattern, except that there is no difference for women between HMO and non-HMO employees. Interestingly, female employees appear to work fewer off-hours than their male counter-parts regardless of whether they work in an HMO or another employment-based setting. Men, on the other hand, work fewer such off-hours in the HMO than they do in other settings.

In addition to actual hours, physicians working in the larger organizational setting should indicate a preference for fewer hours compared with those in the smaller private practice setting. A measure of ideal hours was constructed using *actual* weekly work hours and questions that

immediately followed which asked if the respondent wanted *ideally* to work fewer, more, or the same hours and, if more or less, how many. If the respondent indicated wanting to work X fewer hours, then they were assigned [ideal hours] = [actual hours] – X; if they said they wanted to work Y more hours, they were assigned [ideal hours] = [actual hours] + Y. If they said they wanted nothing different than their current hours, then they were assigned [ideal hours] = [actual hours].

Table 1.7D indicates the portion of respondents in each setting who reported ideal work hours less than 40. The results show that men and women in HMOs are more likely than their counterparts outside HMOs to prefer such reduced hours conditions. These data must be interpreted with caution, however, since they may reflect cognitive adjustments made by respondents "post-hire."

If hours are in fact important to explaining the over-representation of women in the HMO setting, then entering weekly work hours as an independent variable in regressions predicting HMO membership should have the result of weakening the magnitude and significance of the gender variable. This is indeed the case; with the addition of hours, the coefficient on gender drops from 0.39 (shown in table 1.5) to 0.18 (not shown), and its significance drops from the 0.01 level to nowhere near significant. This suggests that hours mediate the relationship between gender and HMO employment to a considerable extent. Causal ordering cannot be established in these data, since hours and HMO employment are simultaneously measured (and simultaneously determined as well, to an extent, at the moment of hire). However, we can say that the link between sex—which is causally prior—and HMO status is strongly mediated by weekly work hours.

Sex discrimination

An alternative explanation for the over-representation of women in larger organizations is the possibility of gender discrimination. Rather than being selected from the demand side of the labor market based on quality criteria such as those explored under the professions theory above, individuals could be being categorized based on sex for other reasons—which may or may not involve private assumptions about the relationship between sex and ability.

The most obvious place for discrimination to be occurring is at the point of hire. One way in which discrimination might lead to organizational-type sorting is if small practice organizations engage in discrimination based on perceptions of 'fit' between incumbents and potential hires. This could be the case if decisions are made using ascriptive characteristics like sex, or cultural cues associated with sex, as indicators of such a fit. Large employers, in contrast, tend to have more formal and centralized hiring mechanisms, with more-developed criteria used for evaluating potential hires as part of their personnel systems (Baron, Dobbin and Jennings, 1986). In other labor markets, large employers have indeed been found to discriminate less often (Holzer and Newmark, 2000).

If discrimination against women in the medical labor market were affecting HMO employment rates, then those women who were in HMOs should more often have been turned down in attempts to gain more-desirable positions outside the HMO sector. This line of reasoning assumes women were not deterred from at least *pursuing* other positions. Rather, if women were pursuing more desirable (non-HMO) positions just much as men were, but failing to obtain them at as high a rate because of discrimination at the point of hire, this would force more of them into the HMO sector.

In a limited way, the survey data can be brought to bear on this issue. Respondents were asked if, when they took their current practice position, there was another work choice that they would have preferred but did not obtain. The exact question read, "When you were deciding to work in your current practice, was there a position or practice arrangement that you applied for that would have been your first choice but was not offered?" There could be reluctance among respondents to admit having wanted a job they could not get, though there seems no strong reason to suspect this potential bias to be problematic for the findings.

Table 1.9A reports these lost-position results. Women in HMOs were no more likely to report the loss of a desired position than were women employed outside HMOs (7% vs. 7%), and women overall were less likely to have reported a loss when compared to men. Therefore, the evidence does not support the notion that women are employed in HMOs at greater rates as a result of having more often lost opportunities to practice in other settings. Regarding sex it is worth noting that overall in the entire sample women were no more likely to report a lost position at the time they took their current one (7.5% vs. 7.0%, n.s.).

Interestingly, Table 1.9A indicates that men in HMOs were almost twice as likely to report a loss when compared to men employed outside HMOs (15% vs. 8%). This relationship persisted in regressions on the likelihood of having reported a lost position, with full controls (significant at 0.01 level; not shown). This raises the possibility that men of some particular type are being discriminated against in non-HMO settings and are ending up in HMOs. Another explanation is that an unobserved but "legitimate" dimension of individual quality is leading non-HMO organizations to reject some men, who then end up in HMOs in a manner consistent with the professions theory.

Discrimination may also occur in capital markets, limiting the ability of women to become *owners* of solo practice or private partnerships as opposed to employees. The data provide some limited evidence on whether women in HMOs were more likely to have been blocked from accessing the ownership sector. Respondents who reported a lost position (as described above) were asked if that lost position involved being an owner. Results are reported in Table 1.9B. The key finding is that actually no women physicians in HMOs reported having unsuccessfully pursued an ownership position (not statistically different from the very small number of non-HMO women who reported as much).

In sum, the limited evidence available does not seem to support a view that women are over-represented in the HMO because of discrimination blocking their entry into other employment or ownership settings.[11]

Extensions and robustness

These analyses were extended in several ways. First, identical analyses were run using the categorical variable of 'large medical organization' defined as 30 or more physicians. This approach has data limitations, as described above, but produced qualitatively similar findings in terms of the direction of effects and rough magnitude (shown in Appendix 1.A). Also, where owners were noted to be excluded from regressions, separate analyses have included them (not shown) with the result of almost always producing even stronger effects.

Additional controls were also used in regressions but excluded from the final results shown because they limited the sample size significantly. For a subsample of physicians,

[11] Evidence *is* consistent with black physicians being discriminated against. Overall, 16% of blacks reported a lost position compared with 7% of non-blacks (including whites and Asians). This relationship holds in regressions with a full set of controls including ability scores (odds ratio estimate on coefficient for black is 7.6, significant at 0.001 level). These controls are important, because black physicians have significantly lower average MCAT scores than do non-blacks.

The greater lost-position frequency among black physicians may also be influencing their employment in HMOs. Among blacks in HMOs, the lost-position rate was highest, at 19% (compared with 11% of non-HMO blacks, and lower rates across the board for non-blacks).

geographical population density in their practice locale was available. This appeared to be positively correlated with HMO employment, as would be expected given the volume of patients required to efficiently run such centralized services. However, the inclusion of population density did not eliminate the significance or magnitude of key effects, including the sex gap in HMO employment.

Finally, where logistical regressions were used, comparable multinomial regressions were also conducted using three categories (HMO, non-HMO, and owner). These produced similar results to those presented, but were deemed less accessible for readers. The dichotomous dependent variable of HMO versus non-HMO employee appeared to present the highest-quality data and the cleanest test of whether various effects influenced the likelihood of being a member of a large medical practice organization.

DISCUSSION

In this research I have sought to evaluate the efficacy of two theoretical approaches to understanding the HMO in the physician labor market. The first approach, drawing on the sociology of the professions, emphasizes autonomy and constraint in shaping those outcomes. The second approach, drawing on career theory, calls attention to the potential for systematic differences in schedule preferences, bringing a new perspective to understanding the large medical organization. The following discussion first summarizes the findings, and then explores their interpretation.

The results suggest that the HMO—an archetypal formalized large medical practice organization—involves *both* the curtailment of autonomy *and* a reduced work schedule. These findings suggest a trade-off generated by the large organizational structure: access to schedules

with fewer weekly work hours but lower practice autonomy. The lower hours in the large organization also appear to be traded-off against lower pay, though it is important to recognize that *hourly* pay rates are identical across the HMO and non-HMO employment settings.

While the key characteristics of HMO *positions* were consistent with both of the broad theoretical approaches to understanding the physician labor market, the evidence on which physicians are in fact *employed* in these settings did not provide equally uniform support. Professions theory was not supported by the data in terms of HMO membership being influenced by individual quality or status. Instead, stronger evidence was found that was consistent with the theoretical linkage of individual schedule interests and HMO employment.

Perhaps the foremost finding was the association of sex with HMO membership; women physicians were about twice as likely to work in HMO settings. This was true with controls, including ability, age, and specialty. Evidence was also consistent with the notion that this gender gap in HMO membership was motivated by access to reduced hours. This evidence included hours differences for women (and men) in the HMO, as well as hours preferences of women (and men) in the HMO. The gender gap in HMO membership appeared to widen where physicians had large families, with 3 or more children, also consistent with the view that time pressures and schedule interests underlie the observed pattern. Finally, in controlled regressions, weekly work hours were found to mediate the impact of sex on HMO membership, suggesting again that hours play a key role in the over-representation of women in HMOs.

With regard to the influence of spouses' careers, effects were found for *men* but not women. First, men with physician wives were more likely to be HMO employees, consistent with the view that they experience greater time pressure and therefore seek the better hours available there. Second, men with wives who earned more income were *less* likely to be HMO

employees, consistent with the view that these high-income dual career couples could purchase services that reduced their time pressure and thus need to seek better hours in the HMO setting. These findings for men were observed in regressions with controls, and each of the two findings held in the presence of the other. For women physicians, however, no spousal effects were observed.

A final set of analyses explored the possibility that gender differences in HMO membership might be the result of discrimination on the demand side of the labor market. These efforts looked at whether respondents reported having wanted a more desirable position when they took their current one. If the over-representation of women in HMOs was the result of discrimination, we would expect more women in HMOs to report such an alternative position. No support for this view was found, nor was any found for the possibility that HMO women were being systematically excluded from the ownership sector. However, intriguingly, *men* in HMOs had a higher rate of position loss than their male colleagues employed outside HMOs.

A common pattern emerges from these sex-difference findings. At first glance, a potential inconsistency appears to exist between the finding that *women* were more likely to be HMO employees, assuming this was driven by their stronger schedule interests, and the finding that *men* were more responsive in HMO employment to their spouse's career circumstances. However, these facts can be reconciled if women are seen to always take on greater household roles and responsibilities, as has been found repeatedly in other research (Bianchi, et al., 2000). In that case, women would categorically tend to favor the HMO setting with better hours, as was found. Women would behave in this manner regardless of their spouse's career, or even their own marital status, explaining why they show no response to those factors. Men, on the other

hand, would have greater or lesser interest in the HMO work schedule depending on their spousal circumstances, and thus show more responsiveness to these factors.

Other findings were also consistent with this idea that women physicians had a categorically greater interest in the better hours of the HMO setting, whereas men differed depending on their circumstances. For example, this could explain why very few women in HMOs reported that they would have preferred another position over their current one, since they were in fact choosing the HMO deliberately. On the other hand, the fact that men in HMOs were more likely to report that there was another position that they would have preferred but failed to obtain suggests that a portion of them joined the HMO not because of hours preferences but rather due to their limited labor market options. However, the reason for such potentially limited options among HMO men is unclear since they were *not* of lower quality or status in the observable characteristics examined.

The finding that *male* physicians appear more responsive to spousal characteristics than do women physicians—at least in regards to their choice of work organization—is intriguing. Other studies have reported the opposite finding that women are more responsive to spousal circumstances than are men. This has been found both with respect to work careers overall (Han and Moen, 1999) and among physicians in particular (Sobecks et al., 1999; Uhlenberg and Cooney, 1990: 376). The present research highlights the role of the work *setting* in linking individuals to career activities and work hours: women physicians are more likely to work in the HMO, and in that setting they work fewer hours regardless of their spousal circumstances.

One potential reason for this contradictory finding involves the fact that selecting an employment setting is a relatively longer-term commitment for physicians, due to the difficulties involved in moving a physician's patients from one organization to another. As a result,

selecting a *work setting* may be one choice in which long-term future career issues are strongly taken into account, and therefore it heavily reflects the impact of a spouse's long-term career concerns. In contrast, similar studies (of how spousal circumstances impact the focal individual) which focus on weekly work hours as the dependent variable may reflect shorter-term decision processes of a different nature.

This paper did not focus on physicians who were *owners*, in part because the issue of ownership would have complicated the focal analysis on organizational structure. In addition, during the time period of the survey a long-term trend from ownership to employment was underway, and by 1999 more than 40% of U.S. physicians were employees (AMA, 2002). However, owners still represented a slim majority of physicians in the national data, so it is worth commenting on them. Owners tended to work in very small practices; Figure 1.1 shows that about half of owners in the sample were solo practitioners. Owners earned greater income as seen in Table 1.2, though their autonomy differed little overall from non-HMO employees. They also worked significantly more hours per week than did employees. The regressions in Table 1.8 indicate that male owners worked 3 hours more per week than even those male employees who were not in HMOs; among women, owners worked 5 more such hours per week. Further, fewer owners than employees worked a reduced schedule under 40 hours per week. These findings conform to expectations from both the smaller *size* of owners' organizations, making it more difficult for them to maintain a reduced schedule, and from their *ownership status* which leads to greater economic incentive to spend long hours producing revenue (Newhouse, 1973).

Overall, these data suggest that assumptions from professions theory do not describe the dynamics of the current physician labor market. Rather, evidence is more consistent with career

choice factors that have to do with schedules or other work conditions. One way to reconcile these findings with professions theory, however, involves a shift in occupational values. When the cohort sampled in these data was completing medical school in the 1980s, new demographic patterns were transforming the medical profession. The young physicians in this cohort hailed from the first generation to grapple in large numbers with dual-career families, and were likely also affected by the women's rights movement. Many physicians of this cohort incorporated these family and gender considerations into their professional career goals, yet prevailing values in medical schools and professional associations still reflected the earlier professional system. The implication is that professions theory may have applied more forcefully in the earlier era, but individual career issues were coming to the fore in this and subsequent generations.

A few caveats are in order. In general, caution is merited in interpreting the causality of these cross-sectional post-hire data. Direct evidence was not available on the labor market sorting mechanisms hypothesized here, in terms of individual schedule preferences or organizational selection policies. Therefore alternative mechanisms could also explain the observed distributions of individuals into organizational settings. For example, important schedule characteristics beyond weekly work hours or night/weekend hours could be at play. Two key schedule features not observable in these data are the *predictability* of schedules in terms of unplanned hours in the office, and their *flexibility* in terms of the ability to accommodate unplanned events outside the office. Evidence from interviews described in paper 3 of this thesis suggests that the large practice organization provides advantages to the individual physician in both these schedule aspects. This could contribute to the disproportionate number of women in HMOs.

The over-representation of women in HMOs could also be related to individual preferences on margins other than hours or schedules. For example, it could be that women physicians tend simply to be less averse to the curtailment of autonomy, or find greater satisfaction in the team-based work required in the larger medical practice organization. They may be see the larger organizations as entailing less employment or financial risks, or they may value the simplicity of having more centralized services available to them. Prior research has found gender differences in career values around time issues and work involvement, both generally (Bartol, 1976; Betz and O'Connell, 1989) and among physicians (Richardsen and Burke, 1990). However, other recent research suggests these differences may be diminishing over time (Rowe and Snizek, 1995; Tolbert and Moen, 1998).

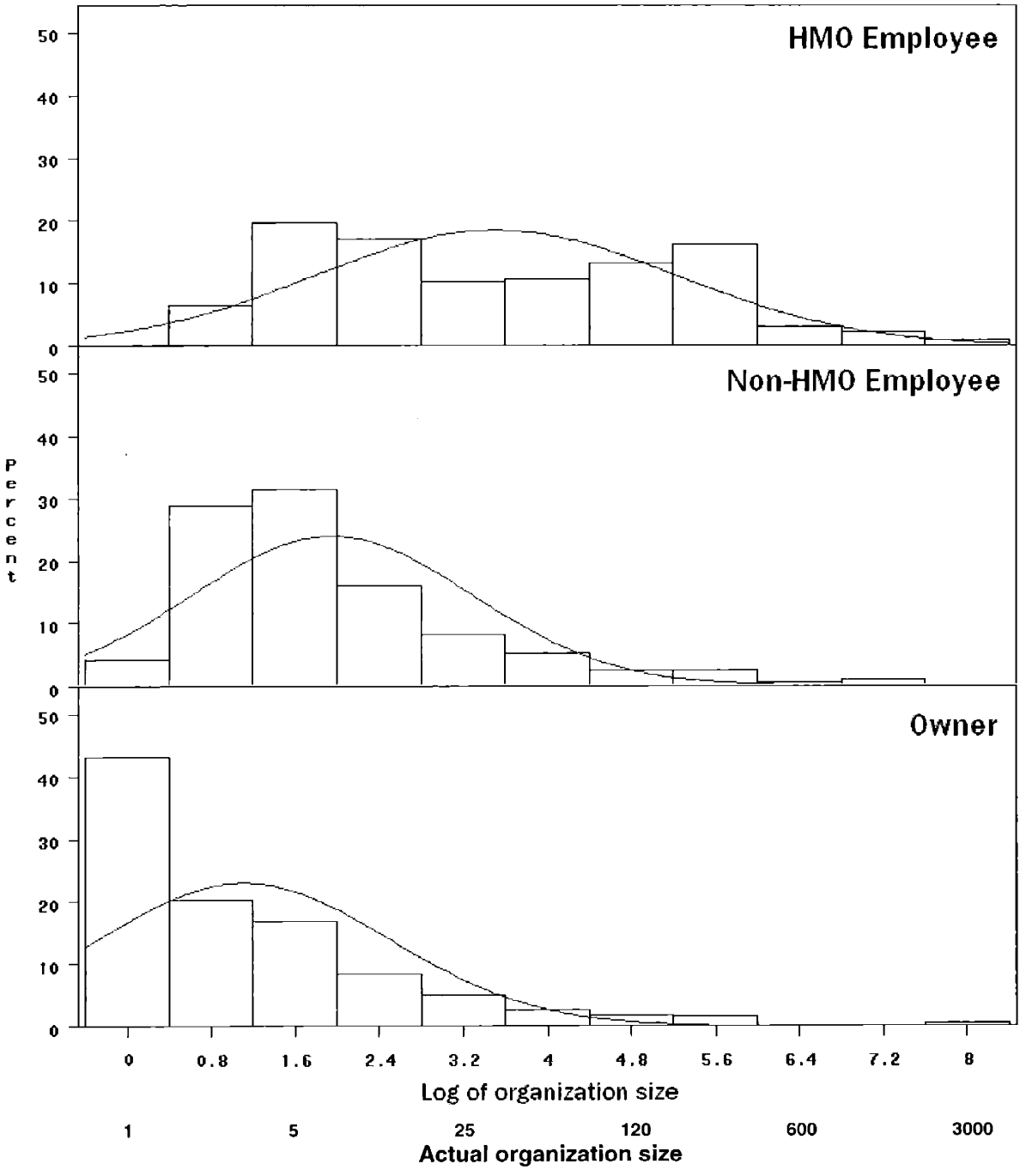
Finally, other demand-side factors could also be influencing the gender representation in large organizations. While evidence of discrimination in the non-HMO was not found, another alternative is that a positive bias toward women in the large organization contributed to their over-representation there in rates greater than in the overall occupation. For over-representation to occur, after all, not only must more women apply to HMOs, but more must also be allowed in the door. This could have occurred because HMOs saw women as potentially more compliant with rules, or more team-oriented. It could also relate to the fact that HMOs' large size made them more visible to state Equal Employment Opportunity regulation (Salancik, 1979).

CONCLUSION

This research was done in order to understand a current professional labor market of great importance. Existing sociological perspectives rooted in the exceptionalism of the professions appear inadequate to this task. Instead, a degree of explanatory leverage appears to emerge from a career-based perspective that focuses on individual career interests and work-family roles.

This work contributes toward a new understanding of professionals, one that emphasizes heterogeneity in individual interests and the possibility of accommodating those interests in large organizations. By neglecting this diversity, we risk assuming that the movement of professionals into large organizations will result only in dispirited practice. In contrast, by incorporating it into models of the professional labor market, we can gain some understanding of which physicians are employed in large practice organizations and why they are in those settings.

Figure 1.1: Histograms of reported organization size distribution for HMO employees, non-HMO employees, and owners



Smooth lines indicate fitted normal curves.

Table 1.1: Organizational size distribution for HMO employees, non-HMO employees, and owners

	Min	25th	Median	75th	Max	Mean	Std	N
HMO	2	7	25	150	3000	138	320	233
Non-HMO employee	1	3	5	11	1816	32	125	917
Owner	1	1	2	6	4000	23	170	2878

Table 1.2: Autonomy, ownership status, income, hours and schedule characteristics for HMO employees, non-HMO employees, and owners

Category Question	HMO employee	Non-HMO employee	t-test	Owner[1]
Autonomy				
Use clinical protocols	71%	66%	+	58%
Need formal approval for equipment[2]	95%	93%	n.s.	82%
Need formal approval for referrals[2]	39%	19%	***	22%
Need formal approval for new treatments[2]	56%	33%	***	39%
Need approval for expensive procedures[2]	53%	38%	***	45%
Clinical decisions reviewed by someone else[2]	78%	56%	***	59%
Income				
Annual income	$96,000	$102,000	+	$163,000
Hourly income	$45	$45	n.s.	$60
Hours and schedule				
Total weekly hours, all practices	49.6	55.6	***	61.3
Total weekly hours, main practice	48.3	53.0	***	60.0
Night and weekend hours	7.7	8.9	n.s.	11.6
Working less than 40 hours per week	33%	20%	***	12%

[1]Differences between non-HMO employees and owners were all statistically significant at the 0.001 level, except: approval for referrals (n.s.), treatments (0.10), and procedures (0.05), and decision review (n.s.).
[2]Questions only asked of physicians who reported working in groups of at least 5 (Sample for these is 1280).
***0.001 level, **0.01 level, *0.05 level, +0.10 level.

Table 1.3: Descriptive statistics for variables used in regressions

Variable	Min	Max	Mean	Std	N
Sex (female=1)	0	1	0.32	0.46	2887
Single (unmarried)	0	1	0.19	0.39	2863
Ln (spouse income)	0	8.51	1.55	8.55	2744
Spouse is physician	0	1	0.18	0.39	2863
Science MCAT	2	15	9.15	2.18	1321
Science GPA	1.73	4	3.38	0.47	2255
Years applied to medical school	1	3	1.22	0.47	967
Foreign medical school	0	1	0.12	0.32	1235
Parents' class (5=upper class)	1	5	2.92	0.99	2865
Born in 1951 (base case is 1950)	0	1	0.06	0.23	2887
Born in 1952	0	1	0.09	0.29	2887
Born in 1953	0	1	0.11	0.31	2887
Born in 1954	0	1	0.12	0.33	2887
Born in 1955	0	1	0.13	0.33	2887
Born in 1956	0	1	0.12	0.33	2887
Born in 1957	0	1	0.11	0.31	2887
Born in 1958	0	1	0.07	0.26	2887
Born in 1959	0	1	0.08	0.28	2887
Entered labor market in 1983 (base case is 1982)	0	1	0.11	0.31	2887
Entered labor market in 1984	0	1	0.11	0.32	2887
Entered labor market in 1985	0	1	0.11	0.31	2887
Entered labor market in 1986	0	1	0.12	0.32	2887
Entered labor market in 1987	0	1	0.15	0.36	2887
Entered labor market in 1988	0	1	0.15	0.36	2887
Entered labor market in 1989	0	1	0.15	0.36	2887
Spec. 2: Internal Medicine (base case is General/Family Prac.)	0	1	0.25	0.43	2881
Spec. 3: Specialty with no reported subspecialty[1]	0	1	0.08	0.27	2881
Spec. 4: Medical subspecialty	0	1	0.03	0.16	2881
Spec. 5: General surgery	0	1	0.04	0.19	2881
Spec. 6: Surgical specialty/subspecialty	0	1	0.06	0.24	2881
Spec. 7: Pediatrics	0	1	0.14	0.34	2881
Spec. 8: Obstetrics/Gynecology	0	1	0.05	0.21	2881
Spec. 9: Radiology	0	1	0.05	0.21	2881
Spec. 10: Psychiatry	0	1	0.07	0.25	2881
Spec. 11: Anesthesiology	0	1	0.05	0.21	2881
Spec. 12: Pathology	0	1	0.04	0.20	2881
Spec. 13: Other	0	1	0.01	0.08	2881
Race Hispanic (base case is Non-Hispanic White)	0	1	0.12	0.32	2887
Race Black	0	1	0.13	0.34	2887
Race Other race	0	1	0.06	0.23	2887
Region 2 (Midwest) (base case is East)	0	1	0.22	0.42	2887
Region 3 (South)	0	1	0.33	0.47	2887
Region 4 (West)	0	1	0.19	0.39	2887

Raw mean values are shown. Regressions use weights to correct for over-sampling of minority physicians. Weights were rarely found to affect results.

[1]includes: Emergency Medicine, Dermatology, Allergy, Immunology, Neurology, Physical Medicine, Occupational Medicine

Table 1.4A: Impact of individual ability, educational quality, family background, and professional identity on employment in an HMO: Analysis of Maximum Likelihood Estimates[1]

	1		2		3		4		5	
Sex (female=1)		0.83 +		2.54 +		0.54		0.28		1.11 *
Science MCAT	0.01	0.04								
Gender*Science MCAT		-0.02								
Science GPA			0.27	0.47						
Gender*Science GPA				-0.56						
Years applied					-0.23	-0.14				
Gender*Years applied						-0.29				
Foreign med. school							-0.62 **	-0.93 **		
Gender*Foreign med. sch.								0.50		
Parents class									0.10	0.19 +
Gender*Parents class										-0.24
Intercept	-1.88	-2.39	-3.86 ***	-4.70 ***	-2.15 ***	-2.44 ***	-2.02 **	-1.86 **	-3.17 ***	-3.55 ***
Full controls	X	X	X	X	X	X	X	X	X	X
N	1318	1318	2250	2250	962	962	1229	1229	2859	2859
-2LL	606	604	1083	1079	609	605	1386	1378	512	511

[1]Among employees. Similar results obtained when owners are included in sample. Controls include age, cohort, region, race, and specialty. ***0.001 level, **0.01 level, *0.05 level, +0.10 level.

Table 1.4B: Impact of individual ability, educational quality, family background, and professional identity on employment in a medical school: Analysis of Maximum Likelihood Estimates

	1		2		3		4		5	
Sex		-0.85		-2.06		1.04 +		0.41 *		-0.20
Science MCAT	0.16 **	0.13 *								
Gender*Science MCAT		0.08								
Science GPA			0.79 ***	0.63 **						
Gender*Science GPA				0.63						
Years applied					-0.52 **	-0.41 +				
Gender*Years applied						-0.45				
Foreign med. school							-0.97 ***	-0.69 *		
Gender*Foreign med. sch.								-1.38 *		
Parents class									0.006	-0.02
Gender*Parents class										0.10
Intercept	-18.5	-18.1	-5.83 ***	-5.36 ***	-2.50 ***	-2.76 ***	-3.09 ***	-3.20 ***	-3.15 ***	-3.10 ***
Full controls	X	X	X	X	X	X	X	X	X	X
N	2248	2248	4396	4396	2330	2330	2957	2957	5698	5698
-2LL	790	790	1960	1956	1021	1013	1370	1363	2615	2613

Table 1.5: Impact of sex on employment in an HMO: Analysis of Maximum Likelihood Estimates

	1		2		3		4	
	Employee sample				*Full sample*			
Sex (female=1)	**0.39**	**	**0.38**	+	**0.68**	***	**0.63**	**
Science MCAT			**0.02**				**0.04**	
Science GPA			**0.17**				**0.06**	
Born in 1951	-0.17		-1.40		-0.27		-1.67	
Born in 1952	0.07		0.33		-0.23		-0.63	
Born in 1953	0.17		-1.18		-0.05		-2.18	+
Born in 1954	0.49	+	-0.20		0.07		-1.13	
Born in 1955	-0.31		-0.72		-0.54		-1.62	+
Born in 1956	0.26		-0.96		-0.07		-1.80	*
Born in 1957	0.04		-1.49		-0.27		-2.28	*
Born in 1958	0.29		-0.59		0.01		-1.34	
Born in 1959	0.49		-0.47		-0.01		-1.46	
Enter labor mkt 1983	-0.44		-15.75		-0.20		-14.17	
Enter labor mkt 1984	-0.75	***	-1.89		-0.52	+	-0.39	
Enter labor mkt 1985	-1.03	***	-2.65	+	-0.63	*	-1.13	
Enter labor mkt 1986	-0.98	***	-2.09		-0.37		-0.32	
Enter labor mkt 1987	-1.04	***	-2.07		-0.33		-0.25	
Enter labor mkt 1988	-0.83	***	-2.09		-0.01		-0.18	
Enter labor mkt 1989	-1.04	***	-2.36		-0.08		-0.30	
Spec Internal Med.	0.15	*	0.55	+	0.22		0.63	
Spec Med. spec. (gen.)	-0.95		-0.65		-0.73	+	-0.33	+
Spec Med. subspec.	0.22		0.90		0.22		1.08	
Spec Gen. surgery	-0.12		-0.53		-0.38		-0.80	+
Spec Surgical spec.	0.04		0.99	*	-0.37		0.59	
Spec Pediatrics	0.07		0.34		0.20		0.54	
Spec Ob./Gyn.	0.18		-1.22		-0.44		-1.49	+
Spec Radiology	-0.19		-0.44		-0.23		-0.55	
Spec Psychiatry	-1.51	**	-1.63		-1.27	*	-1.23	
Spec Anesth.	-1.86	**	-1.43		-2.07	**	-1.76	+
Spec Pathology	-2.09	*	-0.46		-1.73	+	-0.20	
Spec Other	-12.93		-13.62		-12.85		-13.33	
Race Hispanic	-0.19		-0.02		-0.11		0.07	
Race Black	1.50	***	2.03	***	1.59	***	2.20	***
Race Other race	0.34		0.91	*	0.24		0.90	*
Region Midwest	-0.02		0.40		-0.07		0.28	
Region South	-0.45	*	-0.34		-0.56	*	-0.38	
Region West	1.18	***	1.27	***	0.90	***	1.07	**
Intercept	-2.20	***	-1.24		-3.15	***	-2.64	+
N	2881		1195		5756		2031	
-2LL	1390		543				631	
Chi-squared	105.3	***	105.8	***	112.0	***	112.5	***
Δ Chi-squared			0.5	n.s.			0.5	n.s.

[1]Chi-squared values and tests use identical subsamples without missing values on MCAT or GPA (n=1195 for employee sample and n=2031 for full sample).
***0.001 level, **0.01 level, *0.05 level, +0.10 level.

Table 1.6: Impact of spousal status on employment in an HMO, by sex: Analysis of Maximum Likelihood Estimates[1]

	1	2	3	4
	Men		*Women*	
Single		**0.29**		**-0.47**
Spouse is MD		**0.50 +**		**-0.06**
Ln (spouse income)		**-0.15 ***		**-0.34**
Born in 1951	-0.47	-0.46	-0.74	-0.61
Born in 1952	0.40	0.36	-0.54	-0.49
Born in 1953	0.55	0.50	-0.55	-0.50
Born in 1954	0.60	0.54	0.15	0.17
Born in 1955	-0.68	-0.70	-0.15	-0.06
Born in 1956	0.43	0.37	-0.02	0.04
Born in 1957	0.37	0.31	-0.50	-0.47
Born in 1958	0.35	0.31	-0.24	-0.22
Born in 1959	0.76	0.66	0.06	0.07
Enter labor mkt 1983	0.12	0.15	-1.12 *	-1.17 *
Enter labor mkt 1984	-0.61	-0.57	-0.79 *	-0.88 *
Enter labor mkt 1985	-1.10 *	-1.09	-1.19 *	-1.25 *
Enter labor mkt 1986	-0.70	-0.66	-1.36 **	-1.39 **
Enter labor mkt 1987	-0.83 +	-0.82 +	-1.39 *	-1.43 *
Enter labor mkt 1988	-0.56 ·	-0.54	-1.17 *	-1.17 *
Enter labor mkt 1989	-0.86 +	-0.84 +	-1.26 *	-1.31 *
Spec Internal Med.	0.10	0.09	0.45	0.50
Spec Med. spec. (gen.)	-1.54 *	-1.54 *	0.18	0.23
Spec Med. subspec.	-0.21	-0.22	0.67	0.78
Spec Gen. surgery	-0.03	-0.04	-0.51	-0.59
Spec Surgical spec.	-0.04	-0.01	0.36	0.40
Spec Pediatrics	0.13	0.14	0.45	0.46
Spec Ob./Gyn.	-0.83	-0.91	0.54	0.56
Spec Radiology	-0.15	-0.19	-0.27	-0.22
Spec Psychiatry	-2.00 *	-2.01 *	-0.75	-0.76
Spec Anesth.	-15.01	-15.10	-1.01	-0.95
Spec Pathology	-1.45	-1.47	-14.99	-14.98
Spec Other	-15.03	-14.93	-15.10	-15.07
Race Hispanic	-0.48	-0.55	0.50	0.50
Race Black	1.14 **	1.12 *	1.72 ***	1.69 ***
Race Other race	0.11	0.11	0.09	0.11
Region Midwest	-0.28	-0.30	0.25	0.23
Region South	-0.14	-0.14	-0.75 *	-0.76 *
Region West	1.65 ***	1.68 ***	0.52	0.49
Intercept	-2.60 ***	-2.55 ***	-1.32 *	-0.97
N	1899	1899	839	839
-2LL	784	779	503	500
Chi-squared	146.6 ***	155.2 ***	57.2 **	59.5 **
Δ Chi-squared		8.6 *		2.3 n.s.

[1]Results shown for employee sample. Similar results produced with full sample.
***0.001 level, **0.01 level, *0.05 level, +0.10 level.

Table 1.7A: Average weekly work hours in main practice

	HMO employee	Non-HMO employee	Owner
Men	52	56	62
Women	43	46	52

N=135, 1834, 2348 for men
and 98, 814, 523 for women
(HMO, non-HMO, owner respectively)

Table 1.7B: Percent reporting work hours of 40 or fewer

	HMO employee	Non-HMO employee	Owner
Men	26%	13%	9%
Women	44%	39%	28%

Table 1.7C: Average weekly night and weekend hours

	HMO employee	Non-HMO employee	Owner
Men	8.2	9.7	11.9
Women	6.9	6.8	10.5

Table 1.7D: Percent reporting ideal hours of 40 or fewer

	HMO employee	Non-HMO employee	Owner
Men	42%	24%	22%
Women	65%	55%	47%

Table 1.8: Impact of organizational type on weekly work hours: OLS estimates[1]

	1		2		3		4	
	Men				*Women*			
HMO			**-5.56**	**			**-4.72**	*
Owner (private practice)			**2.92**	***			**4.95**	**
Born in 1951	-1.85		-1.89		-1.32		-1.04	
Born in 1952	-1.58		-1.77	+	0.36		0.26	
Born in 1953	-0.94		-1.07		-2.54		-2.67	
Born in 1954	-2.60	*	-2.65	*	-2.26		-2.69	
Born in 1955	-2.52	*	-2.72	*	-6.32	*	-6.10	*
Born in 1956	-3.15	*	-3.30	*	-2.62		-2.56	
Born in 1957	-4.33	**	-4.44	**	-6.39	*	-6.46	*
Born in 1958	-6.10	***	-6.32	***	-5.70	*	-5.27	*
Born in 1959	-5.56	**	-5.91	**	-5.11	+	-5.01	+
Enter labor mkt 1983	0.40		0.58		1.03		1.06	
Enter labor mkt 1984	2.01	*	2.04	*	3.48	+	3.47	+
Enter labor mkt 1985	2.77	*	2.81	*	3.13		3.24	
Enter labor mkt 1986	3.84	**	4.19	**	2.86		3.07	
Enter labor mkt 1987	5.31	***	5.88	***	3.85	+	4.37	+
Enter labor mkt 1988	3.88	**	4.65	**	4.45	*	5.41	*
Enter labor mkt 1989	5.52	***	6.51	***	6.61	*	7.94	*
Spec Internal Med.	0.13		0.15		2.80	+	3.24	+
Spec Med. spec. (gen.)	-6.36	***	-6.20	***	-3.52		-3.87	
Spec Med. subspec.	2.58		2.38		12.33	**	12.85	**
Spec Gen. surgery	8.59	***	8.02	***	9.54	*	10.22	*
Spec Surgical spec.	1.44		0.79		2.13		1.10	
Spec Pediatrics	0.59		0.83		-0.75		-0.37	
Spec Ob./Gyn.	8.54	***	7.98	***	15.54	***	14.50	***
Spec Radiology	-4.19	**	-4.55	**	-3.39		-3.19	
Spec Psychiatry	-9.36	***	-9.14	***	-7.60	**	-7.94	**
Spec Anesth.	3.56	**	2.96	**	6.26	*	5.77	*
Spec Pathology	-6.06	**	-5.68	**	1.27		1.68	
Spec Other	9.26	*	9.45	*	16.19	*	16.16	*
Race Hispanic	0.03		0.03		1.28		1.30	
Race Black	1.37		1.83	*	0.86		1.68	
Race Other race	-1.17		-1.12		-2.17		-2.31	
Region Midwest	0.95		0.90		2.07		1.99	
Region South	1.74	*	1.56	*	5.35	***	4.99	***
Region West	0.08		0.23		1.17		1.07	
Intercept	59.69		58.22	***	45.39	***	43.49	***
N	4308		4308		1434		1434	
F	11.35	***	12.38	***	5.45	***	6.23	***
R2	0.08		0.12		0.09		0.14	
Δ R2			0.04				0.05	

[1]Results shown for full sample. Similar results produced with employee sample.
***0.001 level, **0.01 level, *0.05 level, +0.10 level.

Table 1.9A: Percentage reporting another practice position that they wanted but did not obtain

	HMO employee	Non-HMO employee	t-test	Owner
Men	15%	8%	**	7%
Women	7%	7%	n.s.	8%

N=135, 1828, 2328 for men and 98, 805, 520 for women (HMO, non-HMO, owner respectively)
***0.001 level, **0.01 level, *0.05 level, +0.10 level.

Table 1.9B: Percentage reporting another *ownership* position that they wanted but did not obtain

	HMO Employee	Non-HMO employee	t-test	Owner
Men	8%	2%	***	4%
Women	0%	2%	n.s.	3%

***0.001 level, **0.01 level, *0.05 level, +0.10 level.

APPENDIX 1.A: REPLICATION USING THE SIZE VARIABLE

The organizational setting was also classified according to size, irrespective of ownership, resulting in very similar findings to those presented above. A variable called "large medical practice organization" (LMPO) was developed that included 14% of respondents in this dataset. LMPO was defined to include the 233 employees of HMOs, as well as 207 owners of practices with 30 or more physician staff and 90 employees of such large private practice organizations. Making up the comparison group for the LMPO variable are 2671 full or partial owners of practices with fewer than 30 physician staff, and 583 are employees of such smaller-sized practices. Individuals in LMPOs accounted for 14% of overall (non-hospital) positions, but a disproportionate 20% of (non-hospital) reduced-hours positions.

Table 1.A.1: Autonomy, ownership status, income, hours and schedule characteristics for LMPO and non-LMPO physicians

	LMPO	Non-LMPO	t-test
Autonomy			
Use clinical protocols	67%	57%	***
Need formal approval for equipment[1]	93%	83%	***
Need formal approval for referrals[1]	29%	20%	***
Need formal approval for new treatments[1]	49%	35%	***
Need approval for expensive procedures[1]	51%	42%	**
Clinical decisions reviewed by someone else[1]	74%	52%	***
Ownership & income			
Percent who are employees (not owners)	58%	18%	***
Annual income (000s)	$118	$154	***
Hourly income	$48	$58	***
Hours and schedule			
Total weekly hours, all practices	54.6	59.8	***
Total weekly hours, main practice	53.7	58.4	***
Night and weekend hours	9.2	11.5	***
Working less than 40 hours per week	23%	15%	***

Sample sizes are approximately 3570, except:
[1]Questions only asked of physicians who reported working in groups of at least 5 (Sample size for those is 1280).
***0.001 level, **0.01 level, *0.05 level, +0.10 level.

Table 1.A.2: Impact of individual ability, educational quality and family background on LMPO membership: Analysis of Maximum Likelihood Estimates

	1		2		3		4	
Sex (female=1)		0.13		0.81***		0.34		0.69+
Science MCAT	0.03	0.03						
Sex*Science MCAT		0.05						
Science GPA			0.54**	4.18**				
Sex*Science GPA				-1.09**				
Foreign med. school					-0.64***	-0.68**		
Sex*Foreign med. school						0.10		
Parents class							0.01	0.02
Sex*Parents class								-0.08
Intercept	-1.38	-1.55	-3.62	-4.61	-1.19**	-1.23**	-2.12***	-2.27***
Full controls	X	X	X	X	X	X	X	X
N	1419	1419	2882	2882	2056	2056	3734	3734
-2LL	1082	1072	2187	2167	1470	1463	2825	2810

***0.001 level, **0.01 level, *0.05 level, +0.10 level.

Table 1.A.3: Impact of sex and spousal status on LMPO membership: Analysis of Maximum Likelihood Estimates

	1	2
Sex (female=1)	0.44***	0.55**
Single		0.40*
Spouse contributes > 1/3 of family income		-0.33
Spouse is MD		0.59**
Sex*Single		-0.67+
Sex* Spouse contributes > 1/3 of family income		0.62+
Sex*Spouse is MD		-0.98**
Intercept	-2.12***	-2.23***
Controls for Age, Cohort, Region, Race, Specialty	X	X
N	3780	3736
-2LL	2836	2785

***0.001 level, **0.01 level, *0.05 level, +0.10 level.

Table 1.A.4: Percent of respondents reporting 40 weekly work hours or fewer, among men and women in LMPOs and other settings

	LMPO	Non-LMPO	t-test
Men	17%	9%	***
Women	32%	34%	n.s.

N=360, 2574 for men
and 170, 673 for women
(LMPO and non-LMPO respectively)

Table 1.A.5: Average weekly work hours, among men and women in LMPOs and other settings

	LMPO	Non-LMPO	t-test
Men	58	63	***
Women	50	50	n.s.

(very similar to result using just primary practice setting)

Table 1.A.6: Average weekly night and weekend hours, among men and women in LMPOs and other settings

	LMPO	Non-LMPO	t-test
Men	9.7	11.9	***
Women	8.1	9.8	+

Paper 2

Internal sorting:

How physicians choose and use organizational career options

ABSTRACT

This paper asks if and how large medical organizations accommodate differing career interests, and with what consequences for individuals? To do this, I observe the sorting of physicians into jobs and career activities in one large medical organization using a longitudinal survey. First, I assess the reported frequency of different career activities over a decade. Second, a typology of physician employees is generated using survey data on why they chose to work in the organization. I use this typology to predict *subsequent* career activities, assessing the extent to which those activities reflect individual interests. Finally, consequences in terms of subsequent career satisfaction and income are assessed.

The results suggest that organizational career options which deviate from the norm of full-time clinical practice—such as part-time physician and clinician-administrator—are valued highly by individuals and utilized with frequency. For doctors, the large bureaucratic form of organization provides careers that accommodate differing individual interests to a considerable degree. Further, those choices appear to contribute to gender income inequality, though this diminishes when work hours are taken into account.

INTRODUCTION

Over the past thirty years, an increasing number of physicians have joined large organizations as employees rather than operating as owners of small private practices (Robinson, 1999; Havlicek, 1999). This trend affords an opportunity to examine the changing nature of professional careers in organizations (Leicht and Fennell, 1997). That large professional organizations are more rule-bound is well known. However, what is less often appreciated is that they also can provide different temporal work patterns, and therefore career opportunities, as a result of their greater scale and complexity. Yet these features have important implications for our understanding of professional careers and labor markets.

Much of the literature on professionals starts from the proposition that bureaucracy constrains individuals, that professionals value autonomy, and that therefore they experience large organizations negatively (Goode, 1957; Scott, 1965; Freidson, 1970a; Wallace, 1995). This should lead to dissatisfaction among physicians in larger organizations. Yet analysis of recent survey data indicates that organizational physicians are no less satisfied than their colleagues in private practice (Health Systems Change, 1997).[12] This paper investigates a possible explanation, involving the ability of physicians to pursue career paths in the organization that fit their interests. *The proposition is that while bureaucratic settings erode physician autonomy to some extent, they also provide career options that are highly valued in the current physician workforce.*

I focus in this paper on physicians within one large medical practice organization over a fifteen-year period. I collected original data to form a unique set of longitudinal and cross-sectional surveys combined with qualitative interviews. The survey data track individuals over

[12] Comparing average career satisfaction scores from respondents in organizations with at least 100 physicians to those with fewer, results actually indicated slightly higher satisfaction among those in the *larger* organizations (4.2 vs. 4.1, sig. at 0.10 level). This finding was robust to several restrictions of organization type and specialty.

time within the organization, as well as those who left for other settings. I find that several distinct physician career activities exist in the organization, and they appear highly desired and taken up with frequency. Both individual career-values and demographic characteristics are important determinants of organizational career behaviors. Finally, I find some evidence that those physicians who pursued career paths that 'fit' their career values reported greater subsequent career satisfaction.

This work contributes to a new understanding of professional careers by uncovering career flexibility at the level of the large bureaucratic organization. Why does this flexibility matter? It may help meet the varied career needs of professionals in the current workforce. Existing approaches, which tend to treat professionals in a more homogeneous fashion, often assume that movement into large organizations will result in dispirited practice and unrewarding careers (Derber, 1982; McKinlay and Stoeckle, 1988), or that independent practice arrangements confer greater flexibility (Arthur and Rousseau, 1996). In contrast, I find that medical bureaucracies take on a liberating character by providing a range of career options, and they are often valued most for accommodating temporal career interests. This finding is salient because professional career interests appear to be in the midst of a shift resulting from changes in gender and family structure, affecting the distribution of needs and priorities found in the workforce.

The paper is arranged as follows. First, I briefly review the literature on the effects that bureaucracy is expected to have on professional careers. Then I describe the traditional private practice career, from which the large organization career deviates. Following that, I explain the research methods in detail. The empirical findings are organized in four parts: I describe the major career paths observed over the study period; I examine the determinants of those career paths, in terms of prior career values and demographic characteristics; I look at whether the

opportunity to accommodate individual career interests in the organization contributes to satisfaction; and I analyze the impact of these career activities on organizational income stratification. I end with a summary and discussion.

PROFESSIONALS AND BUREAUCRACY

Two streams of literature, on professions and careers, have recently shifted toward a focus on heterogeneity at the individual level. Work on *the professions* has tended to see individual careers as the product of external forces: highly institutionalized environments and strong occupational socialization processes (Hall, 1948; Merton, 1957; Becker et al., 1961). Adherence to normative career models was emphasized in that literature, driven by commonly held professional values.

The professional value most emphasized in this literature was autonomy. Many researchers considered whether professionals were compatible with bureaucratic employment (Goode, 1957; Scott, 1965; Hall, 1968), since the importance of individual autonomy was assumed to create conflict in organizational contexts. This view was held widely among scholars, whether they argued that professionals would remain separate from organizations (Freidson, 1970a, 2001), or be subsumed by them (Derber, 1982; McKinlay and Stoeckle, 1988); and whether they valued autonomy for functional (Parsons, 1951; Wilensky, 1964) or self-interested (Larson, 1977; Abbott, 1988) reasons. Researchers explored variation on the axis of autonomy (e.g., Gouldner, 1957; Freidson, 1970a; Rubinow, 1979; Bailyn, 1985), and others questioned whether individual autonomy need conflict with bureaucratic goals (Tolbert and Barley, 1991; Zucker, 1991). Throughout this work, medicine has often served as an archetypal reference profession.

Broader and more varied professional career interests—such as an interest in a regular schedule or in organizational leadership—have recently begun to receive attention in the literature on *professional careers*. A few researchers have argued the importance of examining variation in career values among professionals in organizations, through studies of lawyers, engineers and scientists (Perlow and Bailyn, 1997, Eaton, 2000; Gunz and Gunz, 1994; Landers et al., 1996), as well as physicians (Hoff and McCaffrey, 1996; Leicht and Fennell, 1997). Similarly, in the *broader careers literature* a movement to emphasize individual career agency has had the effect of highlighting the role of differing personal interests in generating career choices (Mirvis and Hall, 1994; Arthur and Rousseau, 1996; Cappelli, 1999).

This paper builds on the trend of recognizing variation among individuals *within* the professions, in order to understand career dynamics in a large medical organization. Essential to these careers is the notion that individual physicians are interested in a range of organizational activities. However, equally important is an understanding of how the organizational structure provides individual career options. *Theory and research on professional careers need to link the current focus on heterogeneity in career interests to a deeper understanding of how organizational forms shape careers*. This linkage should help uncover the ways in which organizations enable or constrain the careers of professionals and thus impact on career satisfaction. Research in this domain requires sensitivity to the nature of work specific to each professional occupation, because that work itself limits the roles that organizations can play in shaping careers (Barley, 1996).

Such an approach is also consistent with the broad call from Arthur, Hall and Lawrence (1989) for a better integration of individual and organizational dynamics in understanding

careers. The following section reviews the evolving careers of physicians and the organizations in which they work.

THE TRADITIONAL PRIVATE PRACTICE

In order to understand the effect of medical organization on individual physicians, one has to first consider the work-organization of traditional practice and the logic that governs it. The traditional physician practices in a solo professional corporation or a small partnership with a few other physicians. The work organization of these settings involves a great range of tasks, from all the aspects of running a small business to all aspect of delivering clinical care. The physician has to act as scientist and caregiver, but also as merchant and boss.

The obvious central advantage cited for the traditional private practice is the high level of control it affords the physician in all aspects of the work and organization.[13] But with regard to the organization, this control is a two-edged sword. In terms of running the business, the private practitioner faces both administrative and operational responsibilities involved in ensuring that all the physical and labor inputs are in order so that they can conduct their core business of seeing patients.

These responsibilities include arranging physical space (office leasing, equipment provision, supplies), directing labor inputs (office staff, nursing or other clinical staff), arranging critical non-clinical services (contracting with insurers, bookkeeping, legal representation, malpractice and other insurance), and conducting any marketing activities. Each of these sets of

[13] The incursion of insurance companies into the clinical activities of physicians in all settings—including private practice—may be having the effect of reducing this perceived advantage of the private practice setting over the organization. In the extreme, this could change the calculus for physicians choosing among these options, since clinical autonomy is constrained in *all* settings. However, as shown in paper 1, the clinical autonomy of the physician in private practice still appears to be relatively greater than that in the large organization, and the added layer of bureaucracy in the large organization may well preserve that difference indefinitely.

tasks involves both time-consuming detail and uncertainty. For example, keeping an office staff involves arranging regular pay, benefits, policies, and discipline—but it also involves dealing with the unexpected departure of an office assistant by finding another to hire while simultaneously somehow keeping up with the never ending flow of patients. Few such task can be delegated to others in their entirety.

One physician who had spent most of his career in a solo private practice recalled how the roof once started leaking in the building where he rented space. He had to shut down his practice while it was being taken care of, and there was no one to help him with the disruption in his clinical responsibilities. He had to temporarily find space to see patients and try to reschedule as many visits as possible. His own schedule, which already involved long hours and hectic hours without the crisis, was thrown into chaos. Financially it was also devastating.

A second set of issues that characterize private practice stem from the individual physician-patient relationship. The physician in solo practice or a small partnership essentially must be responsive to patient demands whenever they arise. In its extreme form, the concept of being "on call" means that physicians can be contacted by their patients at any hour of the day or night on any day of the year and be expected to provide services. Rare vacations have to be carefully coordinated with other physicians who would provide on call "coverage," but these arrangements often can prove difficult. Today, it is more common to have regular cross-coverage arrangements, but coordination is often difficult given the differing organizational arrangements and norms across participating physicians.

The obvious consequences of these arrangements in terms of schedule were long hours and a temporal *uncertainty* because patient demand would fluctuate unpredictably. Physicians discussing this state of affairs used the language of "constant vulnerability" to patients, and

always being "at risk." One result was a feeling of unreliability in other aspects of their lives beyond patient care. For instance, one physician in private practice explained:

> And the worst thing about it wasn't so much the time constraint, although that was horrible, but it was that it made you unreliable. There were these long episodes, of which dozens occurred, when I called up and said "gee, I thought I was going to be home for dinner but something's come up, I'll be home in time to read a story to the kids" and an hour later you call up again and say "I'll be home in time for bed" and then you didn't get home at all. Until the kids turn you off, and when you say "I'll be home" your kids say "yeah, sure dad."

In short, *in traditional private practice the schedule is controlled not by the physician but by patients*. The physician and patient are completely 'coupled,' so that there are no substitutes for the physician when the patient has a problem, and no easy way of putting off that problem.

The fact that physicians in private practice are beholden to patients has long-term consequences for their careers. Physicians have little flexibility to change the mix of career activities without major disruption to their patient duties. Patients never go away from the physician's presence, either physically or mentally, because of the total responsibility that physicians take for their patients in this arrangement. And obviously patients never stop getting sick. As one physician put it:

> . . . how do you turn it off? You have patients out there in the world, and they have problems and you want them to be OK. After a while, you may not actually be in the clinic, but it's on your mind and you're not free of it—the responsibility.

Attempted career moves to take up other activities, or cut back to part-time, usually meet with mixed success at best. For example, one physician who tried to cut back on time in a traditional private practice commented that theoretically she had a day off each week, but she never actually was able to take it off. As a result, within two months she gave up the effort because she felt that she was working full-time anyway.

Finally, the burden of patients tends to grow with time, a fact that has particular career consequences in private practice. This growth is partly because in the early career physicians tend to recruit and accept new patients to expand their business at a faster pace than attrition. However, the most important reason in mid- and late-career appears to be the fact that patients naturally age and sicken with time, making them more burdensome. For example, one physician reflected:

> When you're young and working full-time, your panel is smaller and your patients are younger and healthier. It's not as much work. As you get older, though, it all grows and you increasingly feel the need to contain the monster that is your patients.

In sum, the private practice involves relatively high clinical autonomy and a range of roles that extend well beyond patient care to encompass all aspects of running a small business. However, the schedule is exceedingly inflexible and the career options are limited.

METHODS

The data for this study come from one large-scale medical organization, referred to here as Health Care Organization (HCO). HCO is a prominent regional HMO affiliated with a prestigious medical school. It enjoys a strong standing in the community. During the study period, the organization employed approximately 500 salaried physicians and 3000 other staff, located in a dozen health centers in the region. (See Appendix 2.A for a more detailed description).

This research focuses on primary care physicians within HCO. These 'generalist specialties' (general practice, family medicine, internal medicine, pediatrics, and obstetrics-gynecology) together constitute 40% of physicians nationally, and are the most prevalent subset of doctors (AMA, 2001). They also are most likely among specialties to be salaried employees (Hoff, 1998), and make up the major component of HMO and large group practices, including

HCO (Robinson, 1999). Primary care plays a central role under the managed care paradigm (Cassell, 1997). Most primary care physicians practice in office-based settings—not in hospitals—and that is accordingly the context focused on here. At HCO, primary-care physicians practiced in a dozen geographically separated offices spread out in communities around the region. Teams under each specialty in each office consisted of around six to twelve physicians, working with nurses, other medical staff, and office administrative staff.

In 1987, at the start of the study period, HCO counted 42% of employed physicians as female, while the profession as a whole remained closer to 20% (AMA, 2003). This reflected a general trend of women physicians being over-represented in large medical organizations (see thesis paper 1) and in employment arrangements (Hoff, 1998). These women were distributed around the various geographical locations and major medical specialties within HCO, so that they were not concentrated in any particular space. This level of female representation among the core professional staff was probably high enough to influence organizational career norms over the 15-year period studied. For example Kanter (1977), in studying group representation, suggested that when women held more than about one-third of a group's membership they had sufficient sway to affect group culture and politics. This is the situation that most *other* medical organizations are only facing for the first time today.

I conducted thirty interviews with physicians and administrators at HCO. These were guided by a semi-structured questionnaire that sought to address their career experiences, and their organizational careers in particular. The majority of interviewees were current physicians in the organization. I also interviewed three former HCO physicians and five non-physician administrators. Finally, in separate interviews with physician members of the state medical

society, I found several to be quite familiar with the organization and provided an external perspective on it.

The quantitative data for this research come from a survey designed to capture longitudinal careers, allowing comparison of individuals over time. The data encompass (1) individuals who stayed at HCO, as well as (2) those who left HCO for other large organizations and (3) those who left HCO for small private practices. This design enabled the behaviors of exit and mobility to be studied in relation to prior antecedents. The survey also includes career values data from the *beginning* of the study period. This is a great improvement on the more common alternative in which career values are reported simultaneously with behaviors using cross-sectional surveys. Such cross-sectional approaches are susceptible to retrospective revision caused by respondents' urges to improve cognitive consistency between their prior values and current situations (Festinger, 1957).

An additional concern for the survey is controlling for organizational factors. Medical practice organizations vary substantially in their structure and resulting work context from the perspective of the physician. Even classifying these organizations has proven challenging (Bazzoli et al., 1999), and they have all evolved rapidly with the pace of change in health care. A practical strategy is to minimize the variation at the organizational level by focusing within one organization. I therefore obtained access to a survey conducted in 1987 of physicians in HCO. The 1987 study was part of the National Study of Salaried Physicians Employed in Large Medical Practice Organizations (Konrad et al., 1989). I identified and re-surveyed the HCO participants in 2002, including those who had left the organization.

The 1987 survey was administered to all employed physicians at HCO in the primary-care specialties of Internal Medicine (IM), Pediatrics (Peds), Obstetrics and Gynecology (Ob-

Gyn), as well as general surgeons (80% response rate, n=183). All respondents from the 1987 survey were targeted for the 2002 follow-up mail survey, including those who had left, as were the newer primary-care physicians in the organization. The final response rate from the 2002 survey, after three mailings, was 62%. The subset focused on in this paper is the panel of stayers and leavers surveyed at two points in time (n=125). (See Appendix 2.B for more details).

The 1987 survey queried respondents about a range of issues, including why they came to the organization. The 2002 survey asked questions about the physician's recent career activities, including whether they had, in the last decade, spent a period of at least six months in part-time practice or in an administrative post. It also asked if the respondents had changed their role or position in the organization in some other way so that the amount or type of patient care had changed dramatically. Career satisfaction data were gathered using an existing index developed for physicians, detailed below. A sample of the survey instrument used for stayers is provided in Appendix 2.D. Only a few questions differ between this and the other instruments used for leavers and new physicians. Finally, the survey data were matched to official HCO human resource data on physician income and employment status.

RESULTS

Organizational career paths

Different career paths within the organization—and out of it—were observed in interviews and in turn evaluated in the survey. The primary career categories documented were: part-time, administrative, alternative clinical role, and exclusively regular full-time. Since respondents were asked whether they had engaged in each of these career activities over the past 10 years, some individuals reported doing more than one. The regular full-time category,

however, was defined by those who reported having *not* done any of the other activities during the period. Below, the typical character of each career paths is summarized, followed by a discussion of their distribution in the HCO data.

Part-time clinicians in HCO carried a reduced load of patients, and had fewer patient visit hours scheduled during the week. Interviews suggested that 'part-time' for physicians can mean a range of weekly hours, including as many as 40 or more. Other researchers have found similar ranges (Barnett and Gareis, 2000). On call schedules were in many cases scaled back in proportion to the diminished clinical load. Several respondents noted that while in private practice an attempt to work part-time is confounded by the ongoing responsibilities of operating the business, in HCO this problem was alleviated through greater centralization. A common point was also the ability in the larger organization to move into and then back out of a part-time position, for family or other reasons. Income and benefits were pro-rated for part-time positions.

The role of physician administrator arises in the large organization because of the need for coordination and control at multiple levels. Positions at HCO ranged from clinical Office Chief to Chief Medical Officer or Medical Director, and appointments ranged from shorter-term to permanent positions. Responsibilities in these posts included colleague evaluation, communicating with other departments and/or offices, and resolving conflicts among staff or occasionally between staff and patients. These responsibilities appear similar to those noted in earlier studies (Betson, 1986; Montgomery, 2001). Almost all physician-administrators in the study maintained a clinical practice at some reduced level. In part as a result, overall work hours for these administrators were often in excess of the regular full-time clinicians. Physician-administrators received additional income for their responsibilities, which varied according to their mix of clinical and managerial responsibilities.

Other organizational roles for physicians were also observed in HCO. One example is a position known as "hospitalist" where HMO or medical-group physicians operate in hospitals to cover responsibilities formerly undertaken by primary care physicians rounding on their patients there. Physicians may also work in nursing home or other extended care facilities doing similar work, or specialize for the organization in particular patient populations. These positions usually originated under the logic of an organizational drive for efficiency or effectiveness, but they also often had a component of individual interest in growth and change on the part of those physicians undertaking them.

Career paths varied greatly in the HCO data. Table 2.1 examines the career paths of two groups: stayers and leavers. Among the stayers, 42% of respondents reported undertaking a part-time position in the past decade, 59% an administrative role, and 12% an alternative clinical role. It was exceedingly rare for HCO physicians to have been exclusively regular full-time clinicians (7%). The leavers were less likely to have been part-time and more likely to have been only full-time, as might be expected given that a portion of the leavers went to private practices where part-time clinical work is exceedingly difficult to manage (see below).

In the 2002 cross-section, the incidence of the various career paths was also high. Using hours as an indicator of work activities, physicians were categorized into 'part-time' if they worked 40 hours or less per week, administration if they worked at least 10 hours in administration per week (regardless of how many total hours they worked), and 'regular' if they fit neither of those two descriptions. Using this system, 28% of 2002 respondents in the organization were in part-time, 13% were in administration, and 58% were regulars. Overall weekly work hours of the three categories varied greatly using these definitions. Part-timers worked 34 hours on average, administrators 62 hours, and regulars 54 hours.

The distribution of weekly work hours in various *activities* also differed across these categories. The hours distributions for part-time, administrative, and regular physicians showed clear differences, seen in Figure 2.1. Not only did part-timers work fewer hours overall, but they also spent a relatively greater portion of their time seeing patients in the office (65% of their time) compared with administrators (38%) and regular full-time physicians (53%). Administrators not only spent longer doing administrative tasks, but they also worked more overall hours per week since many did not cut back on their clinical load.

These career paths within the organization appeared to be temporary and dynamic activities for some, but a more enduring state of affairs for others. Of those who reported having been part-time in the past decade, 55% were still working less than 40 hours per week in 2002, but the rest were working more than that (table not shown). Similarly, among those who had reported an administrative stint, 30% were currently working at least 10 hours in administration, but the rest were not. In fact, more than 20% of those who had previously done administration had returned entirely to clinical practice (doing 0 hours per week of administration, while their total hours still averaged over 40). Interviews also pointed to a core of committed administrative leaders and a periphery of those less committed but willing to take on responsibilities when needed. In short, some were using these paths as long-term career strategies, while others were making shorter-term use of them.

Organizational exit was a career choice made by a large number of the surveyed physicians. Of the original 1987 group, 54% had left HCO by 2002, of which only one quarter were retired. Among these leavers, 30% (16% of the total) indicated having left large organizations altogether, while the rest were practicing at another large medical group, HMO, or similar setting. Therefore a majority of the leavers had moved to another large-organization

setting of one type or another. Finally, while most remained practicing, 18% of the total had stopped seeing patients. (Some of them were still in HCO, and others had left.)

In sum, physicians had been in both part-time and administrative posts with frequency, and many had moved in and out of these positions over time. Many had left HCO, but often for other large medical practice organizations. Straight-forward perseverance in full-time clinical practice was strikingly uncommon.

Career orientations

Non-traditional careers paths—i.e., paths other than full-time regular clinical practice—were common among HCO doctors. Why? For a first look at this question, I examined the 2002 survey responses on why individuals had chosen to take each particular career path. These reasons, while reported *ex post* and therefore susceptible to retrospective bias, nonetheless provide an initial sense for why the physicians were doing these activities.

The most common reason reported for undertaking the part-time position was an interest in having more family or personal time (77%; see Table 2.2). One such respondent encapsulated this view in this comment: "Although it was difficult to relinquish control of the day to day details of my practice, I have really appreciated the clinical support here and I love working part-time. I feel that I am truly able to enjoy both my work and my family [439]." Other reasons, less commonly cited, included the hope of practicing better medicine (31%) and the excessive workload of the full-time position (29%). Only a very small fraction (11%) gave any indication of the organization requiring them to take on this position.

The administrative position was undertaken for a range of reasons, most common of which was a reported interest in leadership (78%, see Table 2.3). One administrative physician commented, "I have loved the opportunities to grow and expand all within one organization.

I've changed my career here from primary care internist to oncologist to building and chiefing an oncology department [203]." This comment reflects a sense of vertical growth, and an appreciation toward the organization for facilitating that. However, many who had taken administrative posts also reported that the organization needed them to do so (73%)—revealing a degree of organizational pressure. More than half also indicated that they hoped the work would be more interesting (55%), and that they wanted to change the organization (54%). About one-third hoped for greater autonomy in the administrative post (33%) or saw it as a step to other positions (29%).

Another approach to investigating the reasons behind each career path, one that addresses the concern about retrospective bias, is to see whether observed career paths reflect expressed career interests measured at a prior point in time. Taking advantage of the longitudinal survey design, I used the 1987 survey to generate measures of career values, and then mapped them to career behaviors based on the 2002 survey. Several possibilities existed for generating the career values in this manner. I chose to first develop a typology of career values based on interviews I had conducted in the organization, and then use that typology as the basis for selecting questions from the 1987 survey with which to classify individuals into one career value type or another.

From the interviews, four major *career-value types* emerged with respect to individuals' organizational careers: work-life balance, career advancement, pragmatic security, and organizational ambivalence. *Work-life balance* was common overall, but appeared to be an overriding factor for a distinct subset of organizational physicians. These doctors wanted to work in a place where they could practice medicine and still have something approximating a regular schedule that included time and energy away from work. The ability to define and

contain the workload, the level of schedule predictability, and the on call burden were frequently mentioned by these respondents.

Exemplary of this theme was Brenda, a female internist who had been attracted to HCO right out of residency because she thought it would help her with the juggling act of simultaneously starting a family and starting her practice. Her husband, a surgeon she met in medical school, would be working long hours and she had looked for a way to practice with a moderate and predictable schedule. In our interview, she recounted horror stories from her colleagues who had started in small practices and run into trouble negotiating part-time schedules with their colleagues. While Brenda thought the lofty goals of HCO with respect to innovating medical care were laudable, that was not the core of her decision to join. In fact, she confessed that when she had joined she was hoping privately not to become too involved in any activities beyond patient care.

The second theme was an interest in *career advancement* and organizational leadership. This appeared to be a complicated concept. Some physicians viewed management as a position of authority and status conferred by the organization. Others gave a less-then-glowing account of the role of administration as an activity while at the same time they were themselves highly involved in leadership and organizational governance. Common to most leaders, however, was a sense of their status and influence over decisions and people, and an orientation toward upward career advancement in the organization.

Typical of this theme was Adrian, a physician who joined the organization after a short early-career stint in private practice, which he had found less stimulating than he hoped. Adrian had an interest in public health, and at the time he joined he had believed that organizations like HCO had the potential to revolutionize medicine, and that they were just at the beginning of

some exciting changes. He explained that his interests were broader than just delivering patient care, and that he wanted to be part of the leadership that continued to advance the state of health care delivery, and he thought that this organization was the place he could best do that. Adrian had from the start of his tenure been involved in a string of different administrative roles from office chief to more senior organizational governance activities.

Physicians under the *pragmatic security* theme were working in the organization primarily because it provided a place to practice with job and income stability. The vagaries and headaches of life in private practice were undesirable distractions. In fact, individuals with this perspective seemed to have few reservations regarding their professional self-image about being an employee of a larger organization. They conveyed a sense of pragmatism in their accounts of what the organization offered, and were the most likely to use imagery like "liberation" or "freedom" when talking about HCO, contrasting it with the traditional option of private practice.

One example of this theme was Peter, a young physician who had recently come to HCO, right after residency, and was anxious to begin paying down his considerable debt from medical school. He liked the geographical region and the organization had a good reputation. When asked, he said he had not much considered other types of practice settings, because he did not want the risks involved in being an owner or the hassles of a smaller practice such as arguing with colleagues over compensation, staffing, or office policies. He just wanted to practice medicine, be paid without worry, and start enjoying some of the rewards of his long training.

Another pragmatist, Pauline, was at a later stage in her career. She had also been with HCO for her entire professional life. She commented on the challenge of being a doctor over the mid-career, explaining that "ultimately, you've got to internalize your notion of success" and "you have to love the patients, because that's what this is all about." When asked what career

goals she aspired to, she responded by saying she just wanted to be well thought of as a clinician by her colleagues.

Finally, those physicians under the *organizational ambivalence* theme were defined largely by what they were not—not interested in the organization as a source of career paths. HCO was simply the place where they happened to be practicing their medicine right now. This view seemed consistent with a more traditional anti-bureaucratic orientation. Yet the interviews suggested that many ambivalent types were not so much *against* the organization as much as they saw it in the same light that they saw just about everything in the current health care environment: with a healthy dose of cynicism regarding whose interests it best served. Hence, when asked in concrete terms, even many ambivalent types cited things they particularly liked about the organization.

Typifying this theme was Amber, a physician who joined HCO because she enjoyed working in the geographical region, and thought the other physicians in the organization were first-rate. Amber had no plans to do anything much at HCO other than practice, nor did she have any plans to ever go part-time ("I went through all that training in order to help patients, after all."). The attitude she had toward "the management" was simple: she hoped that she would be left alone and allowed to tend to her patients without too much external intervention. In fact, Amber explained that when she had joined she had not been terribly certain about the decision; in fact at that time, if another practice opportunity had arisen that offered something more, she would probably have taken it. She had since become more attached to the place, but still seemed to regard HCO with mixed feelings.

Both the pragmatists and the ambivalents were oriented toward focusing on their clinical work, and away from other activities such as administration, research, or even work-family

balance. However, they diverged in how they saw the organization. The pragmatists seemed to see the organization as enabling their pursuit of a patient-intensive work experience, while the ambivalents discussed the organization with less enthusiasm, as if it were more often an obstacle in their efforts to focus on their patients.[14]

Career orientations and career paths

Operationalizing the career-value types

These career-value types were used as a framework for categorizing individuals in the study based on their 1987 survey responses. The categorization was based on a series of questions that were asked in the 1987 survey concerning why the respondent came to the organization. All were answered on a scale of 0 to 3 (0 being not at all important, and 3 being very important). The questions themselves had been generated from physician focus groups (see Konrad et al., 1989). The question was introduced with this text: "Below are listed some reasons reported by physicians for deciding to work in various practice settings. How important were each of these reasons in your decision to join this organization?" Five of the reasons were deemed to best represent the career values themes. These were:

1A. I wanted a smaller, more manageable workload
1B. I wanted predictable working hours
2. I believed this organization would offer me opportunities for career advancement
3. I valued the financial security and the package of fringe benefits that working in this organization provides
4. I saw this organization as an opportunity to earn income while I decided on my future plans

The first two reasons, concerning hours and workload, closely mirrored the balancer theme. From the perspective of the physicians interviewed, these two factors appeared intertwined because higher workloads meant longer and more irregular hours. They were therefore averaged

[14] I developed these career-value types for the purpose of understanding physicians' career orientation *toward the organization*. In this way they differ from those anchors identified by Schein (1978) to characterize broad career orientations among college graduates, or even those archetypes developed by Freidson (1975) to describe the different biases of physicians in their professional roles.

to form a composite variable. Each of the other reasons listed reflected the corresponding career-value theme.

These variables were used in a cluster analysis performed on the 1987 survey data. Clustering categorizes every individual observation into one of four clusters representing the typology. The resulting clusters satisfied the convergence criteria of 0.02 after seven iterations, and generated a Cubic Clustering Criterion of 2.6 (levels above 2.0 are considered adequate). The clusters were of roughly similar size (Table 2.4). The two largest clusters were the pragmatic and advancer clusters, at 51 individuals each. The ambivalent and balancer clusters were also quite large, however, at 40 individuals each. (See Appendix 2.C for more on the cluster analysis.)

Demographic makeup of the four career value clusters

The types are somewhat related to sex and family characteristics, though not overwhelmingly. Table 2.5 shows that the representation of women in the balancer type was not particularly greater than that of men (24% vs. 21%). However, fewer women were of the advancer type relative to men (13% of all women, vs. 39% of all men), and more women were of the ambivalent type (32% vs. 15%). Representation of men in the pragmatic type were not much greater than those of women. The overall distribution of gender with career values was significantly different from a random sorting (sig. at 0.001 level).

Marital status was strongly related to type as well. In particular, unmarried physicians were more likely to be ambivalents. This effect was driven almost completely by women physicians, among whom more unmarried physicians were of the ambivalent type (77% of unmarried, vs. 21% of married, sig. at 0.01 level). In fact, 10 of the 13 unmarried women in the

sample were ambivalents. In contrast, among men few were ambivalent whether married or unmarried (table not shown).[15]

For physicians overall, having children at home did not significantly relate to career values. However, among women more of those with children at home were balancers, relative to those without (28% vs. 12%). However, more women with children were also advancers (17% vs. 7%). Further, many more of those women *without* children were ambivalents compared with those who had children (50% vs. 21%). The group without children therefore appeared less attached to the organization. The overall distribution was significant (sig. at 0.10 level).

The types were also related to age. The advancers were modestly older than others (born in 1945 vs. 1947, t-test sig. at 0.10 level). However, the most evident trend was the younger age of the ambivalent types, who were born in 1950 on average, as opposed to others born in 1945 (t-test sig. at 0.01 level). The average age of ambivalents at organizational entry was 33, whereas that of the other types was 36.

Overall, then, men were more likely to be advancers and women to be ambivalents, with both sexes about equally likely to be balancers and pragmatists. Women appeared to vary more according to family and marital status than did men. Those women who had children at home were more likely to be balancers and pragmatists than those without children. Those women who were unmarried (and those married without children) were very likely to be ambivalents.

Examined by type, two career values were particularly associated with gender, age, and marital status: ambivalents and advancers. The advancers tended to be male and older. The ambivalents tended to be female, younger, less often married, and fewer had children. The other

[15] Spouse's occupation was not much associated with career values. For married physicians in 1987, the spouse's occupation was known to be physician, homemaker, or other. Those with physician spouses did *not* appear more likely to be balancers. Nor was having a home-maker spouse statistically associated with any one career type (few men and no women reported home-maker spouses in any case).

two types, the pragmatists and balancers, were not significantly tilted toward either men or women.

Career value types and subsequent career activities

I investigated whether individuals with these career values were more likely to subsequently pursue one of the career paths identified. A positive finding of increased likelihood would be consistent with a view that individual physicians are able to realize their career interests through career paths within the organization. In particular, I hypothesize that physicians will be found to pursue those paths that follow naturally from the career values typology. The balancers will more often have chosen a part-time schedule (1a), and also avoided the more time-demanding role of administration (1b). Advancers will more often have gone into administration (1c). Pragmatists, those who valued economic security, will be *less* likely to have left (1d), whereas organizational ambivalents will be more likely to have done so (1e). Finally, those interested in career advancement may also be more likely to leave clinical practice altogether (1f).

Table 2.6 shows results of analyses using the combined sample of those physicians who stayed at HCO during the period (n=59) and those who left for other large medical organizations (n=40). Qualitatively similar findings are obtained with the HCO-only sample. As expected, the results show that more balancers had been part-time (56%) than was true for the other types (1a). Unexpectedly, however, pragmatists were also relatively frequent users of part-time, with 50% having been in the role. In comparison, 33% of ambivalents and 26% of advancers had been part-time (sig. at 0.10 level). Balancers were less likely to go into administration (27%), as expected (1b), and advancers were more likely to do so (77%), also as expected (1c). In comparison, 57% of pragmatists and 67% of ambivalents went into administration (sig. at 0.05

level). This pattern persisted even after excluding those who had worked more than 5 hours per week already in administration in 1987.

In logistic regressions that control for specialty, the significance of balancers going part-time, and advancers going into administration, remained (Table 2.9). However, after controlling for age and gender, the balancer coefficient lost significance, suggesting that the career value effect may be a function of the gendered nature of the career values. The advancer coefficient remained significant with all controls. The strong coefficient on gender in both these regressions indicates the persisting tendency of women to take part-time positions, and men to take administrative roles, within the organization.

Differences in the rates of organizational exit also emerged from the career value types. Specifically, Table 2.7 shows that the ambivalent types were more likely to leave compared to their colleagues (68% vs. 51%, sig. at 0.10 level), as expected (1d). However, balancers were also more likely to leave (63% did so). Regarding departure from large organizations altogether for smaller practice settings, as expected, pragmatists were somewhat less likely to do so compared to others (8% vs. 22%, n.s.) (1e). Advancers were more likely to leave clinical medicine altogether compared to others (35% vs. 14%, sig. at 0.10 level) (1f).

In sum, the measures used to proxy for prior career values do appear to influence subsequent career paths, both those in and out of the organization. Perhaps most vividly, over the study period balancers were clearly most likely to have taken a part-time stint, and advancers were most likely to have done administration (with balancers least likely to have done so).

Career path 'fit' and career satisfaction

The previous sections showed that physicians in HCO were undertaking part-time and administrative career paths with frequency, and that those career paths partly reflected

individuals' career values as well as their gender. These findings are consistent with the image of a large organization providing a portfolio of career options that satisfy individual needs. This final section considers further whether those individuals whose paths fit their values are in fact more satisfied with their careers than those whose paths do not fit their values. Because some doctors may not, for whatever reason, have been able to adjust their career circumstances to accommodate their interests, there should be some individuals in the organization whose career activities and values are misaligned, generating variation with which to test this proposition.

The particular relationships I expected were that balancers who had been part-time would be more satisfied compared with those who remained full-time, and advancers who went into administration would be more satisfied than those who had not (2a). In addition, ambivalents who left the organization would be more satisfied than those who remained (2b), and advancers who left clinical practice would be more satisfied than those who remained practicing (2c).

I also considered the counter-hypothesis that physicians might not be sorted into positions that reflected their desires, but that some might be 'stuck' in universally less-desirable positions. If this were the case, we might expect the career paths to differ overall in average satisfaction (2d). If administrative positions, for instance, were occupied by physicians who did not want those jobs but were consigned to them, then we would expect lower satisfaction there. If, on the other hand, physicians were broadly sorted into career activities that reflect their interests, as argued in this paper, then we would not expect to see satisfaction differences across career paths.

Career satisfaction was measured using a 4-item career satisfaction instrument. Each item used the same 5-point scale, where 5 was strongly agree, 3 was neutral, and 1 was strongly disagree. The items were:

- All things considered, I am satisfied with my career as a physician.
- In general, my medical career has met my expectations.
- I would recommend medicine to others as a career.
- If I were to choose over again, I would *not* become a physician (reverse coded).

This index was taken from a validated large-scale physician survey (see Williams et al., 1999). Cronbach's alpha for the index in this sample is 0.89. Item scores were added, so that possible final index scores ranged from 1 to 5. Of those physicians in HCO in 2002, the average composite mean was 3.63 with a standard deviation of 1.0 and a observed range of 1 to 5. For purposes of general comparison, this distribution is similar to that found for physicians in comparable specialties by a recent nationwide survey of physicians (Linzer et al., 2000).

The career value types were first examined to see if fit between values and subsequent career path predicted satisfaction using a sample of organizational stayers. Table 2.10 shows evidence to support this from an ordinary least-squares regression using a dependent variable of the composite career satisfaction index. The dichotomous variable 'fit' was assigned a 1 if an individual's path fit their career value (part-time for balancers, administration for advancers), and a 0 otherwise. The positive and significant coefficient on this variable provides support for the notion that fit increases satisfaction by 2¼ points, (or just over half a point on a 5-point scale) (2a).

In addition, the ambivalents who stayed in the organization were particularly dissatisfied compared to their colleagues who had left, also consistent with expectations (2b). Advancers who left clinical practice—all of whom subsequently spent more time doing administrative work—were more satisfied compared to their colleagues who remained in practice at some level

(2c). However, disaggregated findings on each of the separate 'fit' relationships were not statistically significant, likely because the sample size was quite small at that level.

Finally, as expected, career paths were found to *not* be systematically related to satisfaction on their own (2d). Neither those who left, nor those who had been part-time or administrative differed in career satisfaction. This finding held in regressions that controlled for age and gender (tables not shown). The counter hypothesis would be that some career paths hold more satisfaction than others for all doctors, and those stuck in these less desirable paths are as a result less satisfied. No support for this view was found. Overall, then, there was some evidence for the hypothesis that fit between values and paths would predict satisfaction.

Income consequences

Do these career activities generate visible income differences? A principal concern about organizational careers is the way in which they generate income variance through a system of positions with unequal rewards attached to them, which are then differentially populated by individuals. For example, the gendered nature of jobs in many organizations leads them to be filled more by men or women, creating a sexual division of organizational labor (Bielby and Baron, 1986).

Indeed, the different career paths at HCO do appear to be associated with differing incomes. I examined the current pay of those who had, in the past 10 years, been in each of the four career activities outlined above. In this way I could examine the 'enduring' consequences of having done a particular activity. The 64 people who had done a spell in part-time averaged $116,000 in 2002, whereas the 55 who had done an administrative role averaged $160,000. The full-timers and those who had done an alternative role both averaged in the middle, around $143,000. The different frequencies with which men and women have taken these positions

contributed to a gender pay gap of around $32,000. Without controls, the average female physicians in the organization earned just $120,000 compared with $152,000 for the average male physician. Gender stratification was clearly taking place at the level of the annual paycheck.

However, it would be hard to explain these figures in terms of individuals being pushed into these different positions *by the organization.* The part-time positions—with lower pay—were clearly sought-after jobs for those who had taken them, as indicated by the reasons they reported for doing them, cited above. One possible exception was the administrative role, which was sometimes sought after and therefore could have been assigned as a result of gender-biased favoritism—yet the administrative role was viewed ambiguously within HCO; to many it represented lower status even though it had higher pay. Overall, individual choice seems the most reasonable story to explain this sorting pattern at the organizational level.

When hours of work are taken into account, these annual-income differences disappear. Table 2.11 shows the results of a set of regressions on pay. The first model shows a highly significant $31,000 gender gap in earnings remaining after controlling for medical specialty. The inclusion of weekly work hours in the second model reduces the gap to $15,000. Adding Full-Time Equivalent (FTE) status from the human-resource department files reduces it further to $4000 and statistical insignificance. Models 4 and 5 include further controls for organizational tenure and office productivity which further increase the explained variance while the income gap remains insignificant (note that it actually reverses direction).

Hourly earnings show a more compressed distribution. Among IM physicians, for example, the hourly earnings of part-timers, controlling for tenure and experience, are just the same as those of full-timers at $65 and slightly below those who had had administrative roles at

$68. As a result, the hourly earnings of IM men and women are exactly equal, at $67. The results are similar for the other two medical specialties. These results are, of course, in large part the result of organizational pay policies that link earnings to FTE status, provide a bonus for administrative responsibilities, and make some adjustments for productivity as well as other activities that the physician might be undertaking.[16]

DISCUSSION

This paper has investigated the diverse career choices available to physicians in a bureaucratic setting. In particular, I have explored the extent to which physicians were able to use those career options in order to accommodate their individual career interests. These career options help account for the fact that many physicians are more content in bureaucratic settings than would be expected from their level of professional autonomy.

Summary of findings

The observed career paths at HCO were varied. The 'default' activity of regular full-time clinical practice only characterizes a tiny fraction of organizational physician careers. Much more common are career paths that encompass part-time practice and administration. Other alternative clinical roles are also possible, but not as common. Exit rates from the organization are also high, although the bulk of physicians who leave go to other large medical organizations.

[16] It is worth conducting the thought experiment for HCO to structure positions that were gender neutral in terms of *annual* income. This would logically require either gross differences in hourly pay, or a rule that prevented anyone from working more or less than a set number of hours. The former would be difficult to maintain; unlike the situation of professors or many other salaried knowledge workers, where exact productivity and hours are difficult to observe or compare, productivity and hours for primary care physicians are quite visible among colleagues.

The alternative, setting hours rules, would be logistically challenging. However, a medium-sized medical organization that I examined *did* have such a policy of requiring every practicing physician to work a standardized full-time schedule, each physician also had to take on a rotating set of responsibilities including hospital rounds, evening and weekend call, and urgent care clinic staffing. This was deemed the most equitable and efficient way to arrange staffing, so that there were no exceptions to haggle over in the group.

Yet imposing hours rules would *eliminate the flexibility that was so valued* by physicians of both sexes and all types at HCO. It was precisely the ability to be different in their hours and career activities—and to change them over time while staying within the organization—that HCO physicians valued so much.

The third set of empirical analyses tests whether these career paths reflect the values of individuals within the organization. To do so, I use a typology that classifies individual career values from their prior (1987) survey responses and then relate those to their subsequent career paths. As expected, the balancers are most likely to go part-time, and the advancers are more likely to go into administration. Ambivalent types are particularly likely to leave the organization, and advancers are most likely to leave clinical medicine altogether. Some surprises emerged, however, and gender appears to relate strongly to both career paths and career values. Still, within this highly-educated population, the findings suggest that people exercise a considerable degree of choice over their organizational careers.

The next analyses go further to see if physicians who take career paths that fit their values are in fact more satisfied relative to those who do not. Those individuals who exhibit fit do indicate higher satisfaction scores, controlling for other factors. The actual magnitude of this effect may be stronger than what was observed, since the time between surveys was long enough for many other intervening factors to influence satisfaction. Finally, as expected, satisfaction is not *directly* predicted by the career paths. This represents a modest test of whether individuals represented by the types are able to accommodate their interests in the organization, since if they had not one might expect some physicians to be constrained into universally less-desirable paths.

Finally, I investigated how these career activities were related to salary differences. I found that the career paths were associated with overall income stratification in the organization and the gender pay gap. However, hourly wages looked very similar across the career activities.

Summary of the career orientations

While the main thrust of this paper has been to show that the organization is accommodating different career interests within the workforce, it also provides data on how

different types of physicians *use* the large-scale organization for their career objectives. Taken together, the composition and behaviors of the career value types tell four distinct stories. The ambivalents were female, younger, less committed to any organization, and most likely to actually move organizations. A telling comment written by one ambivalent read:

> I feel no loyalty to my current employer . . . if I could find a position that afforded the lifestyle conveniences I currently enjoy, but more control over administrative decisions and more money, I'd leave this position without hesitation. [444]

In their footloose dispositions and behaviors, these individuals most resemble the new or boundaryless career types hypothesized to be spreading across high-skill occupations (Arthur and Rousseau, 1996; Cappelli, 1999). However, they also resemble workers in non-professional occupations, where the early-career is characterized by higher mobility, and where women move early to accommodate family roles. The key point with respect to professionals, however, is that this group uses the large organization setting to obtain better temporal and career options—yet often without developing commitment to any *particular* employer.[17]

The pragmatists were a group that appeared focused just on their work in clinical medicine (not part-time or administration), but who apparently still found organizations agreeable since they remained in large organizations and showed little dissatisfaction. While perhaps by nature the pragmatists have less to say about their organizational careers, the spirit of this type emerged in this comment:

> I think that my job has grown more complicated in some undesirable ways, but no more so that any other aspect of modern life. I can think of no other career that is simultaneously as financially, spiritually, and intellectually rewarding. [348]

The emphasis here is on professional activities, and not the organization. Further, the respondent takes a seemingly resigned attitude toward changes taking place in the organization around him.

[17] For management, this may be concerning because those physicians most attracted to the organizational form, as opposed to private practice, may also be the hardest to retain within any given organization.

Interestingly, many pragmatists ended up being frequent consumers of the part-time position. Even though they do not express it as strongly in their values, this group still appears to respond to the availability of reduced-hours employment.

The advancers were clearly ambitious. This group sought and usually obtained managerial status. Their comments and behaviors reflected a strong sense of growth and upward progress, and an appreciation toward the organization for facilitating that activity internally. Finally, balance-oriented physicians valued the opportunity for reduced hours and schedule even more than did their colleagues. These balancers were, indeed, more likely to take up part-time positions in the organization. However, interestingly, they were no less likely to leave large organizations for smaller practices. Those who did go to small practices ended up working longer hours than the balancers who stayed at HCO (table not shown). This subset of balancers may therefore have been more dynamic in their interests, for instance becoming "activated" as balancers only during certain points in their family lives.[18]

Interpreting the findings

This research suggests that bureaucracies need not be experienced by professionals as monolithic institutions. The evidence that career value types are systematically sorted into career paths suggests that this bureaucratic organization allows a degree of individual agency in careers. In fact, in contrast to the notion that flexibility is found in independent contracting (the career

[18] These balance-oriented career values appear to be increasingly important among physicians who joined HCO more recently. While schedule and workload were already crucial to most physicians in 1987, they became even more important on average in 2002. This was evaluated by comparing the responses of physicians under 40 in 1987 to those of physicians under 40 in 2002, on the workload-and-hours variable which was used to generate the balancer type. The results showed that young physicians in 2002 reported higher levels of this factor when compared with those in 1987. Their scores averaged 2.3 in 2002 compared with 2.0 in 1987 (t-test sig. at 0.10 level). Similar results were obtained with different sample restrictions.

When run separately for men and women, I discovered that this effect was driven by changes among the young men in the organization, who reported 2002 a value of 2.4 compared with a 1987 value of 1.7 (t-test sig. at 0.01 level). For women the values were high in both periods, and similar across both. This suggests that those men entering the organization in the recent period have substantially greater interest in workload and hours compared to their male counterparts from the earlier cohort, and as a result of this influx, the overall organizational composition had become even more tilted toward this career interest than was true in earlier period.

outside the organization), these physicians describe life *within* the bureaucracy as liberating. It appears to be the predictable schedule and moderate workload, and the ability to make career changes over time, that give rise to this perception.

This work has implications for the question of whether large bureaucratic organizations can accommodate a workforce with diverse career interests. The shift away from an 'ideal worker'—a male head of household pursuing long-term, full-time, stable employment—toward a broader array of workers and interests (Osterman et al., 2001) has also occurred in professional labor markets. Can large organizations provide the needed career flexibility? For some sectors, the answer may be no. But under certain conditions—high-skill service occupations, for example, where the nature of client interaction makes work hours long and unpredictable—the organization may actually generate new career possibilities through better scheduling. In these circumstances, careers *within* organizations may hold more flexibility than those *outside* them—turning a traditional labor market assumption on its head.

The proposition here is not bureaucracy as career panacea. For many doctors and other professionals, private practice and independent contracting will surely continue to play an important role. In fact, the medical profession may be an apt setting to investigate Hannan's (1988) suggestion that increased heterogeneity in organizational *forms* (not just movement from private practice to bureaucracy or vice versa) would provide the most diversity in employment and career arrangements and better accommodate individual skills and preferences.

This research also raises questions about gender in professional organizations. If the large bureaucracy opens up new career possibilities for physicians, but those career options are populated differentially by men and women, how do we interpret the result? Women are for the first time now physicians in large numbers. In HCO, women are in part-time and men are in

administrative roles at different rates, resulting in a pronounced gap in terms of average hours and incomes. Yet those roles appear to reflect individual career interests and choices. The present study is not a perfect test of whether career paths result from individual choice or organizational constraint—since values measured in 1987 could reflect prior organizational influences—but it does improve on cross-sectional research designs. In this organizational setting, intra-organizational gender stratification appears to have emerged in part as a result of sought-after career flexibility.

In this paper, I have emphasized the role of individual career interests in generating career behaviors and associated outcomes. This approach should not be interpreted as a normative stance that accepts such interests as given within society. The gendered distribution of physician career preferences, for instance, is likely to originate in social-structural forces that are found outside the labor market as well as inside it, and which are rooted in the social structure of gendered family roles within society more broadly. Keeping that in mind, my research suggests an important and surprising potential role for the large bureaucratic organization in accommodating the interests that *are* currently found in the physician labor force.

CONCLUSION

This paper has investigated how large-scale organizations accommodate the career interests of physicians. The ability of individuals to pursue their own career interests in this setting helps explain the apparent success that many large medical organizations have had in satisfying members of this highly autonomous occupation. The empirical strategy used in this work was to link the current diversity of professional career interests to the detailed processes through which medical organizations shape career options.

Table 2.1: Frequency of career paths over past 10 years

HCO career activity during past 10 years	Part-time	Admin.	Alt. clinical role	Only regular full-time	Total n
a. 1987-2002 stayers	42% (25)	59% (34)	12% (7)	7% (4)	59
b. 1987-2002 leavers	30% (20)	54% (36)	12% (8)	24% (16)	67

Career paths are not mutually exclusive. Many individuals did more than one of these career activities during past 10 years, so columns partially overlap. For example, the first part-time and administration column includes 12 individuals who did both. Those in the 'exclusively regular full-time' reported doing none of the other three career activities.

Table 2.2: Reasons reported for having done part-time position

1. Wanted more family/personal time: 77%
2. Hoped to practice better medicine: 31%
3. Excessive work in previous position: 29%
4. Organization needed me to do this: 11%
5. Change in spouse's career: 10%
6. Wanted more time for research: 3%

(% who indicated that reason among others on list)

Table 2.3: Reasons reported for having done administrative position

1. Was interested in leadership: 78%
2. Organization needed me to do this: 73%
3. Hoped work would be more interesting: 55%
4. Wanted to change the organization: 54%
5. Hoped to have greater autonomy: 33%
6. Saw this as a step to other positions: 29%

(% who indicated that reason among others on list)

Table 2.4: Mean scores of career value clusters for each of the four clustering variables and three other variables

Cluster	*Variables used in clustering*				*n*
	Financial security	*Opportunity to earn income while deciding future plans*	*Opportunities for career advancement*	*Manageable workload & predictable work hours*	
Pragmatist	**2.69 (3)**	0.24 (0)	1.39 (0)	2.08 (0)	51
Ambivalent	2.00 (0)	**2.45 (3)**	1.33 (0)	2.12 (0)	40
Advancer	1.51 (0)	0.31 (0)	**2.51 (3)**	1.31 (0)	51
Balancer	1.15 (0)	0.28 (0)	0.43 (0)	**1.52 (3)**	40

Variables come from a series of survey questions introduced with the heading: "Below are listed some reasons reported by physicians for deciding to work in various practice settings. How important were each of these reasons in your decision to join this organization?" Item scores ranged from 0 (not at all important) to 3 (very important). In the case of workload and hours, where two items were combined, the mean value was used. In parentheses are the clustering seed values for that item (see Appendix 2.C for details).

Table 2.5: Percent of selected demographic categories clustered in each of the four organizational career values

	Pragmatist	Ambivalent	Advancer	Balancer	Table chi-sq	n
Men	26%	15%	39%	21%		106
Women	32%	32%	13%	24%	16.5**	76
Married women	34%	21%	16%	28%		61
Unmarried women	23%	77%	0%	0%	16.8**	13
Women with children home	34%	21%	17%	28%		47
Women without children home	31%	50%	8%	12%	7.5+	26

Note: Percentages of each demographic group (e.g., men) in that type (e.g., pragmatist).
**=0.01 level, *=0.05 level, +=0.10 level.

Table 2.6: Percent of career value types who have been in part-time, administration, and alternative clinical roles in past 10 years[1]

	Part-time	*Admin. role*	*Alternative role*
Pragmatist	50%	57%	27%
Ambivalent	33%	67%	39%
Advancer	26%	77%	26%
Balancer	56%	27%	19%
Chi-sq.	6.3+	11.3*	1.8
N	99	97	98

**0.01 level, *0.05 level, +0.10 level

Chi-squared test for difference in frequencies of one role among the four types.

[1]Restricted to those who stayed at HCO or another large organization during the period.

Table 2.7: Percent of career value types who have left HCO, left large organizations, and left clinical medicine in last 10 years

	Leaver (left HCO)	*Left large organizations (for small private practice)*	*Left clinical practice (some still at HCO)*
Pragmatist	44%	8%	10%
Ambivalent	68%	27%	23%
Advancer	48%	16%	35%
Balancer	63%	26%	12%
Chi-sq.	7.1+	5.1	6.6+
N	176	124	99

**0.01 level, *0.05 level, +0.10 level

Chi-squared test for difference in frequencies of one role among the four types.

Table 2.8: Correlations of regressions variables

	Part-time	Admin	Peds	Obgyn	Age	Age sq.
Admin.	-0.23*					
Peds	-0.15	0.05				
Obgyn	0.00	-0.23*	-0.29**			
Age	-0.18+	-0.07	0.09	-0.08		
Age squared	-0.17+	-0.08	0.10	-0.08	1.0**	
Sex(female=1)	0.33**	-0.34**	-0.03	0.18+	-0.32**	-0.32**

**0.01 level, *0.05 level, +0.10 level

Table 2.9: Logistic regressions of career paths into part-time and administration

Model	*Part-time*	*Part-time*	*Admin.*	*Admin.*
Balancer	**1.10 +**	**0.95**		
Advancer			**0.96 ***	**1.31 ***
Sex (female=1)		**1.66 ****		**-1.38 ****
Age		0.03		0.61
Age squared		-0.00		-0.01
Peds	-0.98 +	-1.12 +	0.09	0.34
Obgyn	-0.35	-0.79	-1.10 +	-1.07
Intercept	-0.84 **	-0.79	0.19	-13.4
N	95	95	96	96
-2LL	106	92	122	107

**0.01 level, *0.05 level, +0.10 level. Excludes physicians who retired by 2002.
Base case for specialty is Internal Medicine, and for gender it is male.
Models 1A and 1B: Dependent variable = 1 if respondent was part-time at HCO
Models 2A and 2B: Dependent variable = 1 if respondent was in administration

Table 2.10: OLS regression of career satisfaction (among stayers)

D.V. = Career satisfaction	
Path fits values (yes=1)	**0.56 +**
Sex (female=1)	0.16
Peds	0.07
Obgyn	-0.12
Age	0.06 *
Intercept	0.41
N	51
R2	0.15

**0.01 level, *0.05 level, +0.10 level.
Excludes physicians who retired by 2002

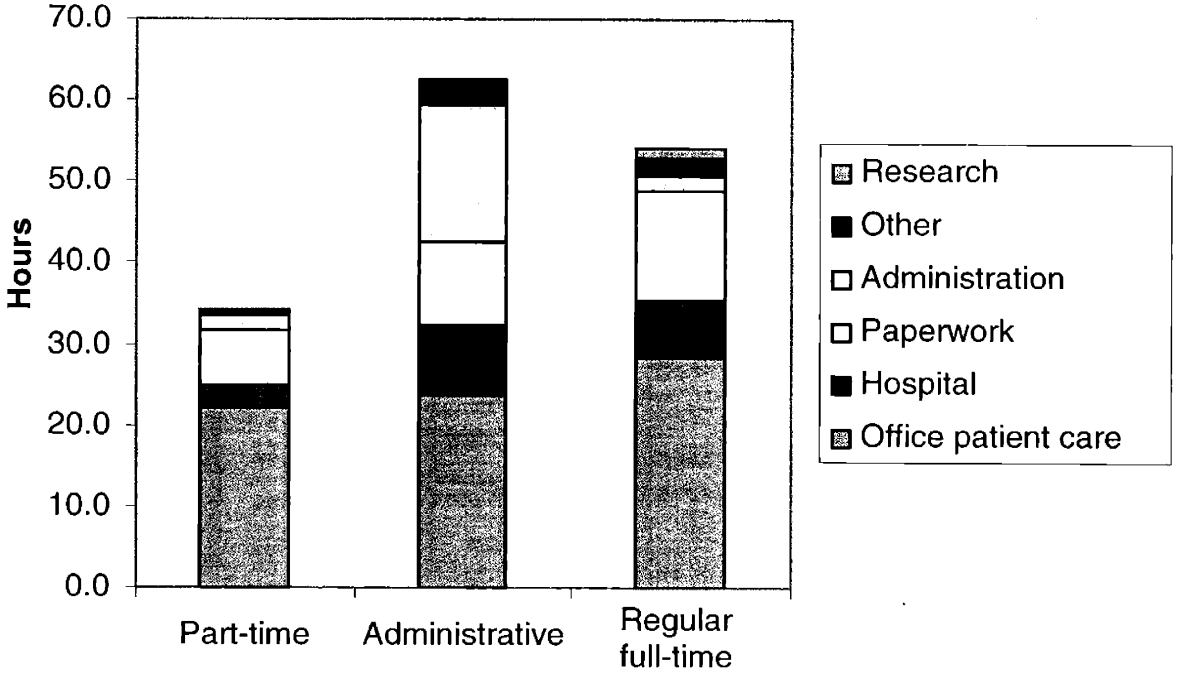
Table 2.11: OLS regressions of 2002 HCO salary data

	1	2	3	4	5	6
Sex (female=1)	**-30965.0 ****	**-14696.0 ***	**-13997.0 ***	**-4351.3**	**4376.5**	**3368.0**
Peds	-4442.6	2818.4	2153.7	-3173.7	-5153.4	-9406.0 *
Obgyn	66054.0 **	50075.0 **	49904.0 **	56795.0 **	53270.0 **	52642.0 **
Hours total		1463.7 **	1394.9 **	107.9	223.7	393.2 *
Hours in admin.			612.5	1145.1 **	1171.7 **	1071.8 **
FTE 2002				152201.0 **	146249.0 **	134839.0 **
Hire year					-4996.4 **	-4026.6 **
Birth decade					-3507.8	-3857.6
Grad. decade					976.1	-292.0
Patients/hour 2002						9721.7 **
Intercept	142940.0 **	63792.0 **	64994.0 **	-3204.8	23976.0	11099.0
N	128	128	128	128	128	128
R2	0.38	0.52	0.52	0.77	0.84	0.85
F statistic	25.7	33.3	26.9	69.0	68.7	68.6

**0.01 level, *0.05 level, +0.10 level.

Includes HCO stayers as well as other 2002 HCO survey respondents.

Figure 2.1: Weekly hours distributions for part-time, administrative, and regular full-time physicians at HCO, 2002



APPENDIX 2.A: BACKGROUND ON HCO

HCO was founded around 1970 by the dean of a prominent medical school and several colleagues. It was started with financial assistance from a consortium of major foundations and large insurance companies. It has always been non-profit and been governed through a mix of a non-physician centralized administration and a practitioner board of directors. During the 1970s and 1980s, HCO was a true "staff-model" HMO in which the physicians were fully salaried employees. The organization was based on the HCO Centers, each located in a community of Boston that they served with a largely independent clinical style.

During the mid-1980s, HCO adopted the Total Quality Management movement. Internal efforts included developing tools for measurement, quality improvement projects, physician quality circles and related teams in each of the Centers. "Guidelines" were developed for physician to follow, and an electronic medical record system was pioneered. Some of those changes meant more rules for physicians to follow, but at the same time many physicians saw themselves as part of something progressive and exciting.

At the time of the 1987 survey, changes were afoot in the organization that reflected a turbulent environment in the regional health care marketplace. Some belt-tightening was going on, mixed together with quality improvement efforts. Some policies were promulgated which affected physicians, including expansion of evening clinic hours, increases in productivity expectations, and centralization of some administrative and human-resource functions. Nonetheless, the physicians at the HCO Centers retained a high level of autonomy both collectively and individually. Leaders of the organization were attempting to navigate change while staying true to the roots of the organization.

The years following 1987 brought other changes. Managed-care competition increased, and HCO responded both externally and internally. They expanded geographically and acquired competitors with overlapping markets. These activities culminating in the 1995 merger with a major HMO competitor. That entity, however, had a different structure and culture, and within one year discussions began concerning the separation of the original HCO medical delivery organization from the combined insurance organization. From the perspective of the physicians practicing in the HCO Centers, their employer changed names, but most aspects of the daily practice of medicine were not affected by the merger and acquisition activity.

Productivity norms were ratcheted up during the 1990s at HCO, as they were in many other practice settings. Doctors were expected to see more patients, and visit times were shortened. A second computer medical record system was introduced in 1998. Compensation was shifted from 100% salary to include modest elements of pay for productivity and quality.

APPENDIX 2.B: SURVEY METHODS

The 1987 survey was developed after extensive interviewing and pre-testing with salaried physicians in a range of settings, and was itself based on an earlier study of salaried physicians (see Konrad et al., 1989). It included items on practice setting preferences, current activities, organizational satisfaction, attitudes about the organization's current activities, and their medical background and basic demographics.

The 2002 survey included several replicated questions from the 1987 survey for comparison at two points in time. These included basic demographic information and medical background, time spent in various work activities, preferences over different practice setting options, and satisfaction with facets of the organization. For leavers, questions were included asking about importance of various reasons for their departure and also about the characteristics of the organization or setting in which they currently worked. All surveys ended with an open-ended section asking how the respondent thought the physician career was changing, how they thought the organization could help them with their career, and for any other comments. These responses were used as a source of qualitative data in direct combination with the closed-ended survey responses. The returned surveys included a large amount of responses to open-ended questions at the end of the questionnaire; two-thirds of surveys included some text in this section, and many respondents wrote at length.

Survey implementation was logistically complex. By comparing the names of the original respondents to current HCO human resources data, I generated a preliminary list of stayers and leavers. For the stayers, I was given access to home addresses (and email addresses) from HCO. For many leavers, HCO gave me last-known-address information. I also sent surveys to all the other 193 comparable physicians who were employed by the organization in 2002 in the same specialties (IM, Peds, Ob-Gyn), nearly all of whom had entered since 1987. Stayers and new MDs were sent an initial email through the HCO email system from the medical director, followed by a mailing to their home addresses from HCO. The mailing included cover letters from the medical director and research team, the survey, and a postage-paid return envelope. The leavers were sent a similar initial mailing from HCO. When mailings for leavers were returned with incorrect addresses, new office address information was taken from the public Massachusetts state medical licensing board website and surveys were re-sent. In cases where physicians had left the state, names were searched on internet search engines and in other public state licensing websites until potential matches were found.

The first round of mailings resulted in a 40% response rate. A second mailing direct from MIT increased the overall rate to around 50%, and a third mailing resulted in a final response rate of 62% (104 surveys from new MDs for a 57% rate, 60 surveys from stayers for a 67% rate, and 65 surveys from leavers for a 66% rate). During the third wave, I conducted a preliminary analysis of the representativeness of the respondents compared with the sample. A modest under-representation of one demographic group was found (men under age 40), and I made follow-up phone calls to ten individuals in order to increase the response rate in this category, resulting in 4 additional surveys. The survey was in the field for 8 weeks.

All respondents were given the option of completing the survey on paper or on-line. Paper surveys, however, were by far the preferred method of completion, with just 15% of total responses received on-line. The final dataset was supplemented with current data from human-resource files, which included limited information on the stayers and new MDs who had not returned 2002 surveys.

APPENDIX 2.C: CLUSTERING PROCEDURE

Several possibilities for categorizing individuals out of these questions were considered. These included: using simple scores to classify individuals into binary categories; using normalized scores to classify individuals into categories; factor analyzing the questions to produce associated questions from which to develop categories of items; and using cluster analysis to generate categories of people. These approaches produced similar results. The clustering method was favored, because it classifies every individual into one of four mutually exclusive categories. This enables the entire data to be used in subsequent analyses. The disadvantage of the clustering approach is it may statistically force some individuals to be categorized with only marginal reason to do so.

Clustering algorithms perform best when the items used for clustering are uncorrelated. This minimizes the over-weighting of correlated items in the final cluster allocation (SAS Institute, 1999). The workload and hours questions (correlation of 0.40, sig. at 0.001 level) were entered as a single combined variable representing the mean of the two original variables. The other items were entered separately. Thus, four variables ranging from 0 – 3 were used in generating the clusters.

Correlations among potential clustering variables

	Mean (Std)	smaller workload	predictable hours	financial security	career adv.	income for now	flexible org.	few positions
smaller workload	1.11 (1.09)							
predictable hours	2.39 (0.92)	0.40**						
financial security	1.87 (0.91)	0.10	0.20**					
career adv.	1.48 (1.02)	-0.02	-0.18*	0.06				
income for now	0.75 (1.02)	0.25**	0.06	0.04	-0.09			
flexible org.	1.74 (0.98)	0.02	-0.09	0.07	0.51**	-0.23**		
few positions	1.08 (1.11)	0.09	0.02	0.27**	-0.06	0.15	-0.08	
way it should be	1.50 (1.12)	0.02	0.00	0.06	0.34**	-0.20**	0.62**	-0.16*

**0.01 level, *0.05 level, +0.10 level. The first five factors (in the inner box) are used in the cluster analyses.

The clustering procedure begins with a set of 'seed' observations which are used to start of the process of assigning each data observation to one of the four clusters. The seeds can be determined manually, or the computer can use random observations from the dataset as the seeds. The clusters shown in Table 2.4 were generated from a simple set of 4 manually entered seeds in which each seed observation contained a 3 for one variable, and 0's on all the other variables. The alternative, using random seeds, produced very similar results. The clustering procedure was relatively robust to different specifications, including iteration maxima and seed replacement rules.

As a way to validate the career values types, they were compared with a set of hypothetical questions from 1987 that asked where the respondent would like to work next, if forced to leave their current situation. The respondents could check all that applied of a series of options, including direct patient care, administrative medicine, and academic medicine. Most respondents included direct patient care in the answer, but not all. Advancers were the least likely to include patient care (63% did so, vs. 70% of ambivalents, 84% of pragmatists, and 90% of balancers, sig. at 0.001 level), and the most likely to indicate administrative medicine (27% did so, vs. 18% of ambivalents, 12% of pragmatists, and 8% of balancers, sig. at 0.10 level). No strong patterns emerged with respect to academic medicine. These results suggested that the clusters were indeed related to career intentions.

The types were also compared in terms of specialty distribution, to ensure that they did not simply reflect dispositions anchored to specialty choice or norms within the specialties. The results suggested that specialty was not associated with type. The types are evenly distributed across the medical specialties represented in the sample (not sig.).

APPENDIX 2.D: SURVEY INSTRUMENT

MIT *Physician Career Study*

Thank you for participating in the MIT Physician Careers Study.

The survey takes 15 minutes to complete. This study is being conducted by the MIT Workplace Center at the Sloan School of Management. It is supported by the Alfred P. Sloan Foundation.

CONFIDENTIAL Your responses will be kept entirely confidential. They will not be publicly identified with you in any way, and will not be released or disclosed to any persons outside the MIT research team. Your participation in this study is entirely voluntary. You may decline to answer any individual questions, although we encourage you to complete the survey in its entirety to ensure the accuracy of the study findings.

A. Professional Background

1 In what year did you graduate from medical school? 19

2 Name of medical school:

3 In what specialty(s) did you train?

B. Work environment

1 Please estimate the percentage of your patients who are:

female

over 65

2 Considering all your current work activities, about how many *hours per week* do you spend in each of the following? (at the bottom, please enter your total hours per week)

In the office doing direct patient care

In a hospital or subacute setting doing direct patient care

Doing paperwork, telephone/email consultation related to patient care

In admin. duties not involved in patient care (e.g., mgmt. or committee work)

In research or teaching activities

Other professional activities:

TOTAL WORK HOURS

Hours commuting (to, from and among work sites)

3 A. What would be your ideal weekly hours in direct patient care?

B. What about your ideal weekly total work hours?

4 A. Thinking about a typical week of your practice, about how many patients do you see in your office or other ambulatory care setting?

B. What would be an ideal number of patients weekly?

5 A. About how many weekday evenings are you expected to be "on call" *each month*? ☐☐

B. About how many weekend days are you expected to be "on call" each month? ☐☐

6 A. In the last year, how many weeks did you spend in Continuing Medical Education? ☐☐

B. Vacation? ☐☐

C. Sick or family leave? ☐☐

7 How much control do you have over each of the following?

	slight or none 0	1	2	extensive 3
Deciding when to admit patients to the hospital	☐	☐	☐	☐
Determining the length of hospital stay	☐	☐	☐	☐
Providing patients with the medications of your choice	☐	☐	☐	☐
What diagnostic tests you order	☐	☐	☐	☐
Details of your office or clinic schedule	☐	☐	☐	☐
The hours you work	☐	☐	☐	☐
The volume of your patient load or panel size	☐	☐	☐	☐
Workplace issues (e.g., office space, facilities, supplies)	☐	☐	☐	☐
Selecting your office support staff	☐	☐	☐	☐
Selecting the medical leadership of your organization	☐	☐	☐	☐
Selecting the administrative leadership of your organization	☐	☐	☐	☐
Determining organizational policies, overall	☐	☐	☐	☐

8 To what extent are your clinical decisions reviewed by your chief or another person in the organization? ☐ never ☐ rarely ☐ occasionally ☐ routinely

9 How often does a patient shed tears in your presence (best guess)? Once every ☐☐ clinic days

C. Preferences

1 *If you were looking for a new job,* how important would each item below be in making your job choice? (check one for each)

	not at all 1	2	3	very 4	+ rank top 3
Compatible physician colleagues	☐	☐	☐	☐	☐
Substantial income	☐	☐	☐	☐	☐
Control of your time away from work	☐	☐	☐	☐	☐
Autonomy in clinical matters	☐	☐	☐	☐	☐
Control over your work context (scheduling policies, hiring office support, etc.)	☐	☐	☐	☐	☐
Influence in the organization's administration (strategic decisions, policies, contracts, etc.)	☐	☐	☐	☐	☐

2 *If circumstances forced you to leave* your present position, in which type(s) of professional activity would you prefer to work next?

	check all that apply	+ rank top 3
Direct patient care	☐	☐
Administrative medicine (primarily)	☐	☐
Academic medicine (primarily)	☐	☐
Further training in a specialty	☐	☐
Another medical activity (e.g., pharma., biotech, med. informatics): _____	☐	☐
A field other than medicine (specify): _____	☐	☐
Retirement	☐	☐

3 *If you were to continue in direct patient care*, what would be your practice setting preferences?

Ideal organization size (MDs):	☐ solo or 2 ☐ 3-9 ☐ 10-29 ☐ 30-99 ☐ 100+
Ideal office size (MDs):	☐ solo or 2 ☐ 3-9 ☐ 10-29 ☐ 30-99 ☐ 100+
Ideal type:	☐ single-specialty ☐ multi-specialty ☐ academic med. center or hospital
Ideal form:	☐ partnership ☐ non-profit ☐ for-profit with external ownership

D. Satisfaction

1 To what extent do you agree with the following statements about your career:

	strongly disagree 1	2	neutral 3	4	strongly agree 5
If I were to choose over again, I would not become a physician	☐	☐	☐	☐	☐
All things considered, I am satisfied with my career as a physician	☐	☐	☐	☐	☐
In general, my medical career has met my expectations	☐	☐	☐	☐	☐
I would recommend medicine to others as a career	☐	☐	☐	☐	☐

2 How satisfied are you with the following aspects of your work in this organization?

	very dissatisfied 1	2	neutral 3	4	very satisfied 5
a. Amount of paperwork/recordkeeping	☐	☐	☐	☐	☐
b. Opportunity to practice medicine the way you want	☐	☐	☐	☐	☐
c. Number and quality of support staff	☐	☐	☐	☐	☐
d. Recognition of your accomplishments by the organization	☐	☐	☐	☐	☐
e. Access to physicians in other specialties	☐	☐	☐	☐	☐
f. Opportunity for career advancement	☐	☐	☐	☐	☐
g. Quality of care you are able to provide	☐	☐	☐	☐	☐
h. Size and manageability of patient load	☐	☐	☐	☐	☐
i. Degree of professional autonomy you have	☐	☐	☐	☐	☐
j. Earnings from this practice and fringe benefits	☐	☐	☐	☐	☐
k. Opportunities to achieve professional goals	☐	☐	☐	☐	☐
l. Predictability of hours	☐	☐	☐	☐	☐
m. Ability to balance work and family/personal life	☐	☐	☐	☐	☐
Your overall satisfaction in this organization	☐	☐	☐	☐	☐

What is the most satisfying aspect of your work? (letter from list above) ☐

If not listed, briefly describe: _____

What is the least satisfying aspect of your work? (letter from list above) ☐

If not listed, briefly describe: _____

3 How much longer do you expect to continue working in this organization? (choose one)

- ☐ less than 1 year
- ☐ one to two years
- ☐ two to four years
- ☐ more than four years, but not indefinitely
- ☐ for the remainder of my career
- ☐ undecided; no specific career plans

E. Work History

1 Since leaving residency, have you ever switched the primary organization in which you work? Do not include ownership changes or restructuring of the same basic organization. ☐ Yes ☐ No

IF YES: How many such changes have you made? ☐

2 In the past ten years, have you held a part-time position as your main work responsibility for a period of time longer than 6 months (do not include time when you were in training; do include job-sharing)? ☐ Yes ☐ No

IF YES: In what year did you take on this position (if more than one episode, refer to most recent)? ☐

How many hours per week did you work in this position? ☐

Why did you take on this position? (check all that apply)

a. Work expectations too high in previous position ☐

b. Wanted more family/personal time ☐

c. Wanted more time to do research ☐

d. Change in my spouse's career ☐

e. Organization needed me to do this ☐

f. Hoped to practice better medicine this way ☐

g. Other (please describe): _____ ☐

Write the letter of the single most important reason you made this change: ☐

Overall, were you satisfied with this part-time arrangement? ☐ Yes ☐ No

3 In the past ten years, have you held substantial administrative responsibilities for a period of time longer than 6 months? ☐ Yes ☐ No

IF YES: In what year did you take on this position (if more than one episode, refer to most recent)? ☐

What type of position was this? _____

Why did you take on this position? (check all that apply)

a. Was interested in leadership ☐

b. Wanted to change the organization ☐

c. Hoped to have greater autonomy ☐

d. Hoped to have more interesting work ☐

e. Organization needed me to do this ☐

f. Role was especially suited to my abilities or experience ☐

g. Saw this as a step to other possible positions ☐

h. Wanted to influence the way my colleagues practiced medicine ☐

i. Other (please describe): _____ ☐

Write the letter of the single most important reason you made this change: ☐

Overall, were you satisfied with this arrangement? ☐ Yes ☐ No

4 In the past ten years, have you taken on any other changes in your role or position within a large medical organization, such that the amount or type of patient care changed dramatically? ☐ Yes ☐ No

IF YES: In what year did you take on this position (if more than one change, refer to most recent)? ☐☐☐☐

Briefly describe: _____

Why did you take on this position? (check all that apply)

a. Work expectations too high in previous position ☐
b. Needed more family/personal time ☐
c. Interested in leadership ☐
d. Hope to have greater clinical autonomy ☐
e. Hope to have less paperwork ☐
f. Hoped to have more interesting work ☐
g. Hoped to practice better medicine ☐
i. Organization needed me to do this ☐
j. New position or role was especially suited to my needs ☐
k. Change in spouse's career ☐
l. Wanted to change the organization ☐
m. Saw this as a step to other possible positions ☐
n. Other (please describe) _____ ☐

Write the letter of the most important reason you made this change: ☐

Overall, were you satisfied with this arrangement? ☐ Yes ☐ No

5 Have you ever worked for more than two years in a career other than clinical medicine? ☐ Yes ☐ No

IF YES: Briefly describe: _____

6 What is the likelihood that you will...

	None	Slight	Moderate	Likely	Definitely	(already have)
leave your current practice/work situation within two years	☐	☐	☐	☐	☐	
leave the practice of direct patient care within five years	☐	☐	☐	☐	☐	☐

F. Personal Information

1 What is your date of birth (MM/DD/YY)? ☐☐/☐☐/☐☐

2 What is your gender? ☐ Male ☐ Female

3 With what ethnic or cultural group do you primarily identify yourself?

☐ White (Caucasian) ☐ Asian or Pacific Islander
☐ African-American ☐ Hispanic or Latino
☐ Other: _____

4 Are you currently:

☐ Married ☐ Never married

☐ Divorced/Separated

☐ Other: _____

IF MARRIED: What is your spouse's occupation? _____

What percentage of your family's total income comes from his/her work? (%)

☐ 0 ☐ 10 ☐ 20 ☐ 30 ☐ 40 ☐ 50

☐ 60 ☐ 70 ☐ 80 ☐ 90 ☐ 100

What are his/her current weekly work hours? _____

Overall, compared with your commitment to your career, would you say your spouse's commitment to his/her career is:

much less ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 much greater

5 Do you have children? ☐ Yes ☐ No

IF CHILDREN: How many? _____

List ages _____

Are any from an earlier marriage? ☐ Yes ☐ No

Overall, compared with your commitment to family caregiving activities, would you say your spouse's commitment to such activities is:

much less ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 much greater

6 Last year, what was your total income from work in this organization?

☐ Under $75,000 ☐ $150-200,000

☐ $75-100,000 ☐ Over $200,000

☐ $100-150,000

7 For the work you do in this organization, would you say that this income is:

☐ A little more than... you deserve

☐ Just what...

☐ A little less than...

☐ A lot less than...

8 Does any of your income come from sources outside this organization? ☐ Yes ☐ No

IF YES: approximately what percent? (%)

☐ 0 ☐ 10 ☐ 20 ☐ 30 ☐ 40 ☐ 50

☐ 60 ☐ 70 ☐ 80 ☐ 90 ☐ 100

G. In your words

1 How do you think the physician's career is changing?

2 What more could this organization be providing you in terms of your career?

3 Any other comments?

Please return the survey in the enclosed postage-paid addressed envelope to:
Forrest Briscoe
MIT Physician Career Study
Sloan School of Management
50 Memorial Drive E52-501
Cambridge MA 02142

Questions or comments?
MIT Workplace Center
(617) 253-7996
fbriscoe@mit.edu

Paper 3

Organizational systems:

How large medical organizations generate physician career options

ABSTRACT

This paper provides qualitative data needed to understand the systems through which large medical practice organizations provide restructured schedules and expanded career options to physicians. The data were collected in interviews with primary-care physicians and administrators in one large medical organization. In presenting these systems, I have abstracted away from their particular details to focus on their general functions both in terms of their intended effects on organizational performance—and their largely *unintended* consequences for individual schedules and careers. These data offer a look in more detail at the mechanisms by which large organizations allow for greater choice and control over work schedules, hours, and work-family tensions.

INTRODUCTION

The previous two papers addressed the consequences of large-organization schedules and careers, in terms of who goes into those settings and how individuals behave within them over time. Yet those papers left unanswered the question of *how* exactly large organizations provide schedules and career options that differ from the traditional private practice. Therefore, this third paper focuses on uncovering the mechanisms through which the organization influences schedules, and thereby generates different career options. To do this, I examine in more depth the organizational systems in place at HCO in order to understand how they function and why they emerged. I pursue these questions through interviews with physicians and, to a lesser extent, administrators.

For analytic purposes, I set these organizational systems into a generalized organizational framework consisting of specialization, coordination, and core buffering functions (Weber, 1947; March and Simon, 1958; Thompson, 1967). In doing so, however, I adapt these concepts to the setting of the client-service organization such as the large medical practice. By using this framework, I uncover how specialization structures serve the function of *partially decoupling the link between physician and patient*, so that any particular physician is no longer required to be available at the moment when a specific patient is in need of medical care. Further, coordination systems enable these specialization structures to operate smoothly, by facilitating the transfer of information and patients among individuals and specialized units.

I find that this decoupling impacts physician schedules by making individual doctors no longer vulnerable to patients at all times—as would be the case in a traditional private practice. Instead, doctors are able to plan windows of time in which they prefer to work. This decoupling is a source of some controversy among physicians in terms of its impact on the quality of patient

care (although that topic is not pursued in this paper). Yet with respect to physician careers, decoupling opens up options like part-time practice, clinician-administrator, research and teaching, all of which require such windows of time to be made available. Further, I find that while these organizational systems function to alter schedules and careers, they were essentially not designed for that purpose. The primary intentions of those who implemented them involved efficiency and effectiveness in the organization's delivery of health services.

The next section of the paper reviews the abstracted ways in which organizations are theorized to shape work practices. I relate these concepts to the analytic problem of understanding the professions. I then report the empirical findings on how organizational systems, separately and collectively, impact physician schedules. Following that, I link these systems to the related careers options and career flexibility in the organization. I discuss how organizational scale relates to these systems and schedules, and how other factors such as organizational culture and reward systems also affect schedule restructuring. Finally, I conclude with brief comments on the implications for understanding the relationship between organization and profession.

THEORY

Work organization and client service

Organizations are often conceptualized as involving the basic functions of *specialization* in the division of labor, *coordination* to handle flows of work and information between specialized units, and *buffering* of the core work technology from the uncertain supply of inputs and other factors in the surrounding environment (Thompson, 1967). Specialization increases the efficiency of those doing each task, but it gives rise to the need for coordination systems in

order for information and work to flow efficiently between specialized individuals or units. Further, the efficient utilization of specialized units requires the core work activity to be protected from interruption. Buffering systems achieve this through a particular type of specialization that ensures a steady stream of necessary inputs to the core.

The classic literature on formal organization focused on regularities in these features, as well as how they related to aspects of the external environment and the individual worker (March and Simon, 1958; Thompson, 1967; Perrow, 1972; Blau, 1972). However, these same specialization and coordination mechanisms that increase efficiency and effectiveness also change *when* work gets conducted. For example, the standardization of input flows allowed assembly lines to run around the clock, with workers regularly scheduled to cover all hours of production. That temporal pattern could never have been achieved by individual workers in craft production. The Fordist mass production system exemplified this structure (Womack, Jones and Roos, 1990).

In the context of professional services, these organizational systems of specialization, coordination, and buffering have particular effects on individual schedules. To understand why, first observe that in the production of services, clients themselves are a crucial input, primarily through their provision of information that is vital to the execution of services (Fuchs, 1968). Therefore professionals are dependent on this element of the external environment, greatly complicating the regular planning of their work schedules. When shocks occur in the supply of clients, professionals are usually forced to respond personally to them because of their direct relationship with those clients.

Although client inputs generally involve a high level of temporal uncertainty, organizational systems can generate new options for professional work that address that

uncertainty. These organizational systems provide a new *flexibility* in dealing with the flow of client inputs which is not available in private practice. For instance, an unexpected flow of three sick patients in the middle of the night—which would have meant working all night for the physician in traditional private practice who was responsible for them—is now handled through a system in which other regularly scheduled components are employed to handle that shock.

Emergence of the large medical organization

The large medical practice organization is a particular type of client-service entity, and these same processes of specialization, coordination, and buffering take place within it. However, these processes are less mature in medical services than in other contexts like manufacturing, and the overall organizational form is in a more embryonic stage of development. A range of organizational ideas and technologies first developed in manufacturing have been transferred to health care over the past several decades with varying levels of success (Berwick, 1989; Laffel and Blumenthal, 1989; Shortell et al., 1995; Bigelow and Arndt, 2000).

The medical practice organization has specialized physicians in parallel units doing things that were previously all conducted serially by the same physician. However, this *organizational* specialization is distinct from the logic of the *professional* specialties, such as surgery and psychiatry. While professional specialties are governed by the logic of abstract or applied expertise, organizational specialization follows the logic of work efficiency and effectiveness. It was developed not to advance knowledge or practice at a macro level, but rather to improve the immediate execution of services within the organization.

Organizational specialization requires complex coordination between the specialized units, which is enabled through a set of coordination systems. These include physical technologies as well as and organizational technologies such as policies, routines and norms.

Finally, the medical organization has systems that buffer the core work of patient care from the uncertainty of non-clinical inputs involved in organizational operation. The effect of this buffering is to reduce disruptions in the patient care process.

Why are these systems particularly associated with larger medical practice organizations? These systems require large scale for at least two reasons. First, sufficient volume is needed in order to ensure that specialized units are at high enough utilization to cover costs. Second, the organization must be big enough to amortize the fixed costs of expensive coordinating technologies, whether they be physical or organizational. I return to this subject in the discussion.

These systems have a critical impact on physician schedules, because they partially decouple the personal physician-patient relationship. Decoupling has the effect, from the perspective of individual physicians, of alleviating the need to adjust to shocks in the supply of patients (i.e., the demand for their personal services from patients). Further, the organization can actually handle shocks in the supply of *physician* inputs, creating a potential for flexibility in physician schedules. As a result, organizations can adjust to unexpected demands on physicians from their family or from other work activities. In contrast, the small private practice 'organization' has little infrastructure for addressing the flow of clients and must be responsive to fluctuations in their supply through the more or less constant availability of each physician.

From the perspective of individual physicians, these organizational systems thus afford more control and flexibility over time and scheduling. That control and flexibility in turn also allows for more career options, a subject returned to in the discussion. Before describing the organizational systems themselves, however, I first outline my research methods.

METHODS

My research strategy was motivated by an interest in uncovering the structure of organizational systems and their function with respect to physician schedules. Therefore, I conducted interviews with physicians in the clinical core of the organization, in order to find out how these systems impacted on their schedules and careers. I also conducted interviews with veteran physicians and administrators to learn about the intended functions of these systems during their development.

During a twelve month period from January 2002 to January 2003, I conducted over thirty interviews at HCO with 15 employed physicians and 5 (non-physician) administrators. The subjects were selected using a convenience sample based in large part on referrals from administrators and existing physicians contacts with the organization. Perhaps as a result of this sampling technique, only one candidate refused to participate. The interviews lasted for approximately one hour each and most were conducted in person in the physician's office. The sessions were recorded and transcribed. A list of the interviewees and their basic demographic characteristics can be found in Appendix 3.A. Among the active HCO participants, 40% were female and average age was 46 with a range from 32 to 73.

The interviews were guided by a semi-structured protocol that sought to address individuals' organizational careers as well as their understanding of the organization more broadly. I asked first *why* they came to the organization to see how schedule and career issues emerged as priorities in choosing a place to work. Second, I asked what factors currently affected their schedules and careers in the organization, using concrete examples. In this way, many of the various systems emerged organically from respondents' descriptions of what enabled or constrained their schedules and careers. Third, I asked directly about what purposes

they thought each of these various systems were serving, both for them personally and for the organization in general.

HCO implemented and improved the systems that are described in this paper at various points throughout its historical evolution. It was one of the early pioneers in the development of electronic medical records, health care quality measurement, clinical guidelines and protocols, and integrated nurse practitioners in primary care. Therefore, I selected several informants who had been with the organization long enough to have seen some of these systems develop and evolve, including two of the founding physicians.

During the same time period that I was conducting these interviews, I was also engaged in a survey in the organization with the primary care physician staff. Two open-ended questions from the survey asked respondents about their careers in the organization, and these provided additional information drawn on in this paper. The survey had a response rate of over 60%, and of those surveys returned just over half provided written comments of some sort, producing comments from 185 separate individuals. These written comments were used to assess the generalizability of the interviews, including the demographic makeup of respondents.

I also conducted an additional 14 interviews with physician and non-physician leaders in other medical organizations in the region. These interviews covered the same issues outlined above, providing further perspective on the extent of generalization and variation in the systems described here. Finally, I conducted interviews and focus groups with 18 more traditional private practice physicians through the state medical society. These provided an external view of HCO, as well as an account of what many private practice schedules and careers were like for purposes of contrast (outlined in detail in paper 2 above).

In addition to interviews, I collected and examined archival documents from the organization stretching for three decades from the time of its founding to the present. These documents included annual reports, special reports, major internal communications to staff, and press coverage of the organization. For example, many of the systems described in this paper were discussed during their development stages in special reports or special sections of the organization's annual reports.

RESULTS: SYSTEMS THAT ENABLE SCHEDULE RESTRUCTURING

The specialization systems in HCO that I identified involve functional, spatial, and temporal divisions of labor in the organization. An overview of these systems is provided in Table 3.1. The next sections go through all the systems in detail, discussing the intended purposes of each as well as how they affect physician schedules.

Specialization

(a) Task division of labor

The task division of labor involves the separation of tasks formerly done holistically. One prominent example of task division of labor is the re-assignment of a subset of tasks which were formerly the responsibility of the physician. Some such tasks have been partitioned off and made the responsibility of a relatively new class of clinicians called nurse practitioners (NPs). These tasks range from taking medical histories to performing simple procedures and even prescribing some therapies and medications. The NPs are supervised by a physician in the same office, and have an intermediate level of training that lies between that of a nurse and a physician. The exact set of tasks that NPs are assigned varies with the clinical team in which they are working.

The primary intended effect of this specialization is of course to increase the speed with which patients get seen by channeling certain kinds of patient problems to NPs and allowing physicians to focus on others that are more demanding of their expertise. However, the division of labor is not completely formalized, which has the important result of generating flexibility at the local level of the work team. One physician described how he perceived this system when he started working at HCO:

> It was liberation. You had a panel of patients that you were expected to take care of. . . . They said it's your job to take care of them as a team. Me, two other internists, two nurse practitioners, a receptionist. It's your job to take care of 'X' number of people, and you can organize this however you want to.

For the purposes of scheduling a patient with a basic problem, there is flexibility in who will see the individual patient at the time care is needed. This, of course, gives some amount of greater schedule control to the physician since it increases the options for who will be responsible for a particular patient at any given point in time. It helps meet demands driven either by unexpected volume of work from a physician's patients— or by unexpected pulls on their time from outside their patient responsibilities.

(b) Spatial division of labor

Some organizational physicians also specialize in various location-based roles. An increasingly prevalent 'hospitalist' service involves physicians who work for the organization but are based in a regional hospital where they attend to the organization's patients admitted to that hospital. They track and ensure the care given to these patients by the hospital, and provide a communication bridge between the hospital and the primary-care physicians back in the main office. This approach was pioneered by large medical practice organizations such as the one studied. One physician described it in this way:

> In the hospital, the patient ... quickly gets used to the idea of this person from the same group being there all day long. So that when a test gets postponed for unexplained reasons, that doctor can go to the bedside and explain it, rather than me [the primary-care physician] out here trying to do something over the phone for them. And [the hospitalists] can be there when the family has to make a critical decision which usually does happen at 8am when I would be in there.

The hospitalist service allows the core primary care staff to better maintain regular schedules that do not involve unpredictable, time-consuming visits to the hospital to see their patients who are hospitalized. Without hospitalists, primary care physicians have to drive to and from the hospital at various times of the day to see patients (called "rounding"). They also have to try to maintain awareness of their patients' progress in the hospital, while they are tending to their other activities such as seeing regular office patients. The commuting to the hospital is often time consuming and unpredictable.

The hospitalist service also affects primary care physicians while they are "on call" during nights and weekends. With hospitalists, physicians who are on call have more options for handling hospitalized patients. For example, while being on call a physician may have responsibility for a patient who is unexpectedly admitted to a hospital through the emergency room in the middle of the night. Without a hospitalist in place, the on call physician is then likely to have to drive to the hospital to look after that patient, disrupting their home life and sleep. With a hospitalist in place, on the other hand, many such patients can be handled directly by the hospitalist. Even those patients whose care requires the input of the primary care physician can more likely be dealt with via a phone call between them and the hospitalist. One interview respondents explained:

> It is a bigger issue when you had to get up in the middle of the night and go somewhere. That's *really* being on call. I used to have to get up in [Suburb X] and drive to the hospital in [Suburb Y] in the middle of the night. That was the worst. Here, we have evolved so that it's not uncommon to get a phone call, but you never have to get up. This is because of the hospitalists.

A service similar to the hospitalists has also been established to address the geographical dispersion of patients into various nursing homes and rehabilitation centers, which together are called "extended care facilities" (ECFs). Patients can be based in these facilities for various reasons including recovery and rehabilitation after acute care incidents or hospital procedures. In these circumstances, a challenge arises for core primary-care physicians similar to that experienced with hospital care: trying to track their patients in and among these settings while maintaining regular activities in their offices. The ECF service therefore performs a similar function, with similar effects for the core physician staff.

These two systems represent a spatial division of labor in that they lead some physicians to specialize in a particular location, but they also constitute task specialization on the part of physicians, since the hospital and ECF physicians are essentially doing a set of activities that were formerly exclusive to the holistic primary care physician role.[19]

These hospitalist and ECF services also provide schedule flexibility for the core physician staff. No longer is there the lost time or added scheduling uncertainty involved in commuting to and from different facilities. Nor is there the greater uncertainty as to how long the actual clinical work will take in these settings, an uncertainty that arises because this selected

[19] In a way, these hospitalist and ECF systems add another provider layer between the primary-care physician and the patient. This can potentially create confusion or disruption for the patient. It clearly gives rise to the need for greater coordination and adequate management of patient expectations about how the system will work. However, these systems are anecdotally reported by HCO physicians to actually increase the continuity of care for patients in the hospitals and nursing home facilities. This is partly because there is assured to be a physician in the hospital or ECF setting, rather than a *possibility* of the primary care physician being there when she can make it.

set of patients is more seriously ill than the general population seen in the office and their needs are therefore harder to predict in advance.

(c) Temporal division of labor

Other systems create a division of labor that primarily functions across time. This temporal division of labor involves specialization not in different tasks but in different *times* of doing tasks. Time is of particular importance because of the sequential nature of client services: one physician and one patient are required to produce a unit of service, and the next unit cannot be produced by that physician until she finishes with one patient and moves to the next.

One of the key systems in this regard is a team approach to doctoring at the local office level. A set of physicians—as few as 3, as many as 12 or more—ensure care for all of their patients. While the physicians still each have their *own* patients, there is a degree of decoupling so that a given patient at a given time will not necessarily be seen by his or her own physician but possibly by someone else in that physician's team. The team approach requires an effective system for planning and negotiating schedules, which can be more or less formal in nature.

The team approach thus provides the potential for greater flexibility in who will attend to which patient. This flexibility was observed to exist on several timescales. For instance, in a given week the team has to ensure adequate coverage of physician staff to treat "whatever walks in the door"; but on a longer timescale, the team can plan predictable vacation times and cover each other in the case of physician illnesses. One physician explained:

> Basically, [it takes] enough presence so that someone is here every day. Things can happen, family emergencies, and small practice units can't do that completely like we can. . . . We've got a separate coverage for the exceptions – vacations. We have a system in the larger group around school vacations. The more of these arrangements you have, the better it is.

The clinical team shares not just regular daily responsibilities but also night and weekend on call responsibilities. This means that during those periods of time when a given physician is on call for the team, he or she is responsible for the whole team's patients. Therefore members of a larger team enjoy a lower frequency of being on call, all else being equal, but a relatively busier time during each on call window. On call "coverage" was generally arranged at the clinical team level. Though the organization might have spread out these responsibilities over the entire pool of employed physicians, the team level provided greater scope for coordination (discussed below) while still greatly reducing the burden on any given physician.[20]

A second temporal division of labor, with more rigid time boundaries, involves the urgent care clinic. This is staffed with physicians and runs during evenings between the hours of approximately 6pm and 10pm, and on weekends. It guarantees that patients with a certain class of common problems can be seen by someone in the organization during those hours, without involving the primary physician. During nights and weekends, a third system also provides care options for patients via the telephone. This is the nurse phone hotline, which in fact takes calls twenty-four hours a day. Nurses triage patient calls and direct patients to various levels of care. Depending on the call, they may dispense limited medical advice, authorize emergency room visits, scheduled regular office visits, or contact the physician on call for that patient.

The use of these temporal systems transforms the work schedule for the physician from one of being continuously vulnerable to patients, toward one of being on duty during pre-arranged windows of time. This is a dramatic transformation. These systems further reduce the unexpected demand on physicians, making their schedules more regular and potentially flexible

[20] This team approach to day and night coverage does not create much of a need for scale in and of itself, in terms of the sheer number of individual physicians required to provide coverage. Anecdotal evidence suggests that groups of 6 to 10 can be sufficient in size. What is more important are *systems* to make the coverage arrangements work, and a culture that supports it. These team-based arrangements would be much more difficult without the critical presence of all the hand-off facilitating systems present in the organization.

to accommodate other career or non-work activities. But they also give rise to the need for advanced coordination in order to function smoothly, an issue discussed in the next section.

Coordination

Without adequate coordination systems, problems may arise with these divisions of labor described above. For example, if a patient has used the urgent care clinic or the nurse triage phone system, the primary physician may need to know about that visit right away. If they happen to see that patient without having information about the earlier visit, this could critically affect the decisions they make. The need for a similar level of information flow arises with the team approach to doctoring, where in the extreme scenario a patient may be seen by one primary-care physician on one day and another the next. Three types of coordination systems were identified that assisted with the handing-off of information or work among individual physicians or staff: information systems, the standardization of services, and client expectation management.

(a) Information systems

If patients are going to be handed off from one physician to another and from one specialized unit to another, then there has to be an effective way of transferring information. A widely accessible computer records system makes patient information available throughout the organization, to any qualified practitioner. Computerized medical records stand in contrast to the historical norm of hand-written patient charts, which vary considerably in style and content by physician. The computer record is standardized and becomes instantaneously available throughout the organization whenever updated.

As a result, one physician who has to cover another physician's patient has all the relevant information at his or her fingertips, without delay, and without the challenge of trying to

read another person's handwriting—not a factor to be underestimated in medicine. In addition, all other specialized units can access the information wherever and whenever they need to (the urgent care clinic, the phone triage nurses, the covering and on call team members, the hospitalist and ECF physicians, even the pharmacy and authorized medical administrators).[21] One physician explained how this system worked:

> Having this computer system – you do the records immediately when you make them. Say I have a patient in the morning, and leave here at 2pm, and my patient gets sick that afternoon and has to come in at 7pm at night. My colleague is here, he's got my notes to look at, often times the x-ray and blood count results on the system. All of that is immediate. It makes coverage so much easier. If you were in private practice, you might not even have that paper chart depending on the time of day.

(b) Standardization of services

If patients are not guaranteed to see the same provider every time they interface with the organization, then consistency and standardization in those interactions become more important. Patients must feel that they are receiving high quality care regardless of who is seeing them. Further, patients choose their primary care physician for various reasons, including perceived clinical competence but also demeanor and style of organization or communication. Interview respondents explained that patients can become disoriented or angry when they come expecting one set of experiences and then have to encounter a different physician with an entirely different approach.

The organization standardizes physician practice activities in a *limited* way through the use of internal clinical protocols that pertain to the diagnosis or treatment of various specific clinical conditions. These may dictate a sequence or scope of testing to be undertaken, for instance, if a particular set of symptoms is presented by a patient. Another common practice is

[21] The physician can also access the information system from home through the internet. This raises a separate set of issues around schedule and flexibility in physician telecommuting which are beyond the scope of this paper.

the internal review of physicians' decisions, by practice managers and physician administrators. These reviews focus on the delivery of appropriate care, while attending to the cost as well as quality performance of physicians. Generally, they also serve to encourage standardization in clinical activities.[22]

Perhaps more than these formal rules and supervisory roles, respondents spoke about a more subtle but still tangible issue that amounted to standardization in terms of informal "practice style." It was reported to be important that if one physician's patient was going to be seen by another physician, that the physician had to have a similar approach to the patient encounter. Without this, problems might arise. For example, if a patient is used to a physician who always keeps a tight schedule, experiencing a long wait could be frustrating; conversely, if a patient is used to a physician who runs over but always spends longer with each patient, experiencing an abrupt end to the visit could also be frustrating.

Another aspect of standardization mentioned by respondents involved the approach each physician took to recording patient information, called charting. Although in medical training, physicians learned a relatively standardized style of recording patient information, there is still a great deal of latitude remaining. The computerized medical record insures the legibility and a degree of thoroughness in charts, but common norms that have apparently developed within clinical teams also help to make one doctor's charts understandable to others in the team.

[22] These standardization practices were controversial within medical circles, inside and outside the organization. For some physicians, they go to the heart of concerns over change in medicine. They variously invoke negative perceptions including that organizations are overly rule-bound, that the art of medicine is being transformed into formulaic "cookbook" drudgery, and that unwelcome external forces are intruding into the scared physician-patient relationship. Yet among many physicians they were seen as positive, part of a movement toward "evidence-based medicine" that focuses on making diagnosis and treatment more narrowly guided by scientific evidence. Of course, standardization in clinical practice represents a kind of commodification of the labor process, since aspects of decision-making that were formerly tacit and undertaken at the individual level have become commodified into written guidelines and protocols (Abbott, 1991; Hafferty and Light, 1995).

(c) Client expectation management

If patients are going to see different caregivers and be handled by different specialized units, then they have to be educated about what to expect from their interaction with the system. In particular, patients have to be aware that while they still have a personal relationship with one physician who looks after them directly, some of their medical encounters may involve other people in the team. As one physician described it:

> People who come here know that we work in teams. I try to explain that to patients when I have a new one. I say when I'm going to be here, say they can time their phone calls to when I'll be here, and say if you call after I'm gone, this is who you're likely to see or talk to, one of my practice partners or one of the two NPs that I work with. People are pretty comfortable with that.

The organization has been experimenting with ways to improve patient education in this regard. For example, their increasingly popular website once included a message from the medical director to new patients with these comments: "Your primary care physician, working with a team of nurse practitioners, physician assistants and others, will handle your regular checkups, provide care when you are sick, help coordinate your specialty medical care and look after your overall health." More broadly, the organization portrays an identity in the community that transcends any of their individual physicians. This wider image may help orient patients to see the system itself as looking after their needs, in addition to or in concert with their individual physician.[23]

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[23] In abstract terms, this patient-education process is a way of influencing a key input in the production process—the client—in the hope of preventing complications. However, it taps into a broader issue of client trust in professional services. Giddens (1990) argues that a defining feature of modern society is the transfer of trust from personal relations to impersonal "expert systems" such as the professions. In this sense, the medical organization is asking its clients to reallocate some of that trust from the individual professional (and the professional system that stands behind these individuals) to the *organization*. For this to take place, not only must the physician relinquish elements of control and shift from an orientation of individual responsibility and autonomy to one of accountability and shared decisionmaking (Shortell et al., 1998), but patients must come to see the system as a key part of what they are procuring when they contract for health services. For present purposes, the key point is that in order for this transfer of trust to occur, the organizational system has to function reliably.

Buffering

One final type of specialization observed was the classic separation of non-core activities into a separate operational unit. This has the effect of buffering the core patient-care service being conducted by physicians. It consists of the centralization of many business functions—both administrative and operational—away from the core physician staff. These include most of the non-clinical tasks that are more the physician's own responsibility in the traditional private practice, such as budgeting, contracting, billing, facilities maintenance, staffing and training. One respondent listed several centralized services that she appreciated not having to worry about:

> Private practice is totally different. You have to provide your own everything: rent your own space, hire your own staff, worry about all of their benefit issues, have all kinds of insurance for the building, for other things, get your own malpractice coverage. You really are managing all aspects of everything. Here, a lot of that is taken care of. You're provided with an office. You have all these benefits, retirement plan, life insurance. We have a legal department, if you need any legal help or advice. You don't have to go looking for it.

This centralization results in fewer occurrences of a physician being pulled away to take care of business-related issues. Since these issues can have a high level of uncertainty, in terms of occurrence and duration, separating them away from the core physician staff has the effect of improving their potential for schedule control.

Another way in which the core physician work is buffered from external variability is through the front office scheduling function. This takes on more sophistication in the large organization compared to the private practice, with computer and phone systems helping to ensure a steady pre-planned flow of patients to the physician. However, it is not emphasized here because even in a solo practice physicians have an assistant of some sort doing scheduling and front office tasks for them.

THE ROLE OF ORGANIZATIONAL SYSTEMS IN SHAPING SCHEDULE & CAREER

Organizational systems and schedule restructuring

The *specialization* systems described above all had the potential to increase organizational efficiency. However, I focus on their effects in terms of partially decoupling the physician-patient relationship, and the consequences for schedules and careers. They reduce the dependence of the organization on core physician staff for providing services at the moment when a particular patient needs help. They do this not just by qualitatively reducing dependence overall, but by limiting the time windows during which the organization relies on each individual physician to provide patient services, and by providing options during any given time window for accommodating the number of patients who may seek services.

For the core physician worker, this represents a shift from vulnerability to safety, from temporal uncertainty to planning capability. Recall the traditional private practice where schedules were dictated by patients' needs, over which the physician had little control (description in paper 2). A physician's schedule which in that traditional scenario would have been hostage to patients is instead under the physician's own control—subject to negotiating with the organization and other professional staff. Some of this schedule restructuring is caused by specialization itself. For example, hospitalist and on call systems mean that physicians do not have constant night responsibilities or early morning rounds anymore. But the physician is also simply afforded greater latitude to plan which particular blocks to time—hours, days, weeks—during which he or she will work.

Going back to the view of the client-service organization as a production process, the specialization function enables the organization to better handle uncertainty in the input of physician labor as well as that of clients. Formerly, physician labor was highly constrained

because it had to adjust completely to the flow of patients. Now there are available other labor inputs (physician or otherwise) that can *substitute* for the individual physician in the production process.

Coordination systems contribute to schedule restructuring by supporting specialization. In addition, they may also open up other possibilities for dividing tasks based on specialization. A positive feedback relationship appears to exist between specialization and coordination systems. Functioning coordination systems are necessary for a given level of specialization to be sustained, but then those coordination systems may in turn trigger other previously unimagined divisions of labor. For example, at HCO the presence of the computer medical record helped inspire the development of the ECF service because it permitted geographically decentralized record access and updating. In turn, new specialization structures may also uncover ideas for other coordination systems to emerge.

As with other systems described, the main consequence of *buffering* through centralization is efficiency. But here again an additional result of this structure is greater scheduling flexibility. The removal of non-clinical tasks from the portfolio of the physician's responsibilities reduces the temporal uncertainty involved in them. For example, tecall the leaking roof in private practice which wreaked havoc on a physician's clinical practice and entire life until it was resolved (described in paper 2). In the large organization, buffering minimizes such potential disruptions.

Schedule restructuring and career options

Schedule restructuring in turn enables other career options, as well as the flexibility to move in and out of them. To understand why this is the case, first consider what other career activities physicians commonly pursue: research, teaching, further training, and clinical or

administrative leadership roles. These might involve the organization directly, or be conducted entirely outside the organization. Other career options outside the organization include involvement in various professional associations, or myriad economic activities that use the physician's expertise but do not involve direct clinical care. Finally, an increasingly sought-after involvement is with family or other unpaid activities outside of work.

All of these deviations from a full-time clinical career require access to windows of time that are protected from patients. For any individual physician to be able to take on such a career activity requires them to have dedicated time not involved in seeing patients or associated clinical work. Over time, the physician has to maintain this reduction in patient-related hours, and find a way of scheduling those hours so that they are predictable. In the large organization, individual physicians can do so through the systems outlined here.[24]

Enabling career transitions

These organizational systems are also critical to enabling career transitions over time. To grasp the importance of this, consider the range of activities that physicians can be engaged in over the course of an organizational career. The example of one physician who summarized her recent career activities illustrates this variety:

> I worked full-time for the first couple years. . . . I had 2 children within the first 5 years . . . . Initially, I was working just part-time and nothing else, and eventually doing a total array of other things that the organization had to offer. I've been a chief of department; I've been on a board committee for a couple years. In the late 80s I worked in the corporate offices doing quality assessment, quality measurement studies, guideline development. I also did some national activities in the early years of quality measurement.

This range of activities was not uncommon. But whenever career changes are sought by physicians, they require a way of altering their existing practice to accommodate the transition.

[24] Respondents also pointed out that even the career of *truly exclusive full-time clinical practice* was enabled by the large organization. This option was actually unavailable in the traditional private practice owing to the other myriad activities involved in running a practice that intruded on the work of clinical practice.

Whether an individual wants to become more involved in an organizational or external activity, or spend more time with family, the adjustment is usually difficult to manage. The specialization and coordination systems in the large medical practice organization greatly facilitate these transitions. One physician described a major transition instigated by starting a large family:

> We have six children now. . . . It's hard to combine that with practice. . . . My husband is also a physician. That meant cutting way back on my practice, to half-time. And I could do that in this setting. I had to talk with my practice partners about it. I was 100% FTE at that time, doing some administrative work on top of my practice. So I was going from that way down to 55%. I wanted to be home in the afternoon when the kids were home from school. I worked from 8:30 to 2, and then had the afternoon off.
>
> I sent my patients a letter telling them of my changes. First I took 2 months off, like a maternity leave I think it was initially kind of hard on my practice partners. But at the same time, I closed my panel so that I wasn't taking any new patients, and the size went down through natural attrition. . . . That over the next couple years helped. Then as the kids got older, I've added time back in, so now I'm back up to about 82%. I've been able to do that here.

This example may lie on the far end of the spectrum in terms of family circumstances, yet the logic described in terms of the process of making career transitions while remaining a patient-care physician was shared by a great many other respondents.

Career options as an unintended consequence

These systems and structures were not implemented at HCO for the purpose of accommodating better physician schedules. Rather, the twin drivers of cost control and quality improvements appear to have produced most of them. The expansion of schedule and career options as thus occurred as a secondary benefit for employed physicians.

Some of these systems have their genesis with the founders' commitment to the idea of better patient access to care. During the public health movement in the 1960s and 1970s, these leaders were interested in increasing the availability of clinical services. The reasons for this included an interest in being responsive to the needs of patients in a more planned manner, rather

than having them end up in a hospital emergency room where no-one knew them and care would be uncoordinated and costly.

An early HCO annual report explained that the organization was able to control costs by "reducing the amount of costly hospital care our members receive by offering complete coverage for outpatient care, and by making this care convenient to access at our full-service health centers." This involved the development of systems like the urgent care clinic which gave patients access to HCO services in the off-hours. These systems were thus initially part of an agenda geared toward keeping patients out of the hospital and controlling associated costs, not improving physician schedules. One interview respondent commented:

> We've always had these things in place, literally since day one in 1969. There would always be someone taking care of your patients. We have always had evening and weekend clinics, and excellent telephone service, literally every day all through the night so there is no such thing as having to go the emergency room because your practice is closed.

This comment shows that the motivation for implementing many of these systems involved ensuring patient access rather than a concern with physician schedule flexibility.

Similarly, the *coordination* mechanisms such as the electronic medical record were developed to serve multiple purposes, particularly quality assurance and improvement. One annual report explained that HCO "currently uses its computerized medical-record system to remind physicians of patients who require follow-up care for certain specified problems." The report went on to discuss the various quality assessment programs that HCO was engaged in and which used data from the computer system. Early organizational proponents of the electronic medical record believed that they would also lead to more accurate records and fewer medical errors. In sum, the rationale for developing the electronic medical record had more to do with quality assurance than with enabling physicians greater flexibility in scheduling.

Career problems

It is important to note that many respondents did not simply idealize organizational careers. Careers in the large organization were not meant for everyone, nor were they without their negative trade-offs. Even those who had chosen to come to the organization for the greater career options still described challenges and dissatisfactions in their organizational careers, including the loss of autonomy. Some raised issues related to career dynamics, such as the loss of direction and feelings of stagnation during mid-career. Others noted tensions with colleagues about the fair distribution of responsibilities for people engaged in different career activities (a topic explored below under reward systems). The changed nature of work in the organization also affected some; a few respondents reported a loss of intellectual stimulation from the routinization of work, and worsened patients relationships resulting from time pressures. (See Appendix 3.B for more on these issues.)

MACRO FACTORS SHAPING SCHEDULE & CAREER

The role of scale

The size of the organization plays an important role in making these structures and systems possible. First, volume is required in order to ensure that specialized units and individuals are utilized at a high enough capacity to cover their fixed cost. Second, scale makes lumpy investments in coordination systems financially tenable. Systems such as computerized medical records and clinical protocol development involve large fixed costs that need to be amortized over a large revenue base. The urgent care clinic, dedicated hospital service, and telephone triage system also all require sufficient demand volume to operate efficiently.

The high patient volume that comes with larger organizational size also helps to smooth out uneven demand flow, facilitating better planning and resource utilization. When one physician is overloaded with work from their patient panel, another physician or providers in the clinical team (or even in the wider organization) can take up that slack rather than forcing the one physician to increase his or her burden. However, this type of work transfer is only feasible if partial decoupling can take place. In this sense, then, scale and systems are complements in the facilitation of schedule restructuring.

The role of culture

Scale is a necessary but not sufficient condition for these systems to function in a way that alters schedules and careers. Within the organization, I identified two other factors that are also important in shaping schedules and careers: a supportive organizational culture and a compatible reward system. The organization's culture was said by respondents to promote respect among physicians and administrators for part-time practices and career activities other than regular clinical practice.

In this respect, the organizational culture at HCO diverges from the traditional culture of medicine. Like other professional occupations, medicine carries a norm that an individual who works long hours is likely to be more committed to their work and their clients. Bailyn (1993) argues that while this assumption need not be the case, it has come to permeate much of our work culture. It may even form the basis for the long hours that characterize work in law firms, according to Landers, Rebitzer and Taylor (1996). They argue that hours are used as a 'signal' of commitment in the evaluation of junior colleagues who are being considered for promotion.

A supportive organizational culture may be an especially important factor in the professions. Professional organizations typically involve relatively few formal rules in

comparison to non-professional bureaucracies, and much individual action is therefore guided by normative controls and unwritten ways of doing things (Goode, 1957; Etzioni, 1961; Kunda, 1992). For example, Perlow (1997) found in a study of engineering professionals in a large bureaucratic organization that long and inflexible hours need not be inherent to the nature of work but rather were part of a customary way of doing things in the organization. Yet even after conducting an experiment that showed the engineers that they *could* work better schedules without any apparent negative consequences, they soon reverted to their old habits—illustrating the potential strength of such norms in professional organizations.

At HCO, culture was generally supportive of reducing clinical load. Reflecting on what made a part-time practice work, one physician pointed out that collegial opinion mattered because colleagues had to "play ball" with you when you wanted to make a career change or hoped to have a particular schedule plan accommodated by the rest of your team. She went on to say:

> Honestly, how it affects the patients is not that important, it's really how other *physicians* tolerate it. The reason I was allowed to switch [into other career activities that required a part-time practice] and just be what I wanted to be, is because I've always had a chief and colleagues who very much supported me. Compared to a private practice, it's accepted here.

The contrast between this scenario and an unsupportive practice is stark. Traditional private practices may be more likely to be unsupportive, since there is a sense that all the physicians' incomes depend on collective productivity. In any case, the importance of culture is also reflected in the contrasting comments of one physician from a six-physician private practice who had wanted to go part-time but felt unable:

> There was a woman in the practice who worked part-time, and she was expected to be on call and admit patients on her day off! It was a culture that you get paid part-time with part-time benefits but still have to do full-time work. It was like you owed the group something extra to make up for being part-time.

The culture of support for careers in HCO has complex roots. The organization was founded during an era of progressive new ideas about public health, which at the time represented a deviation from the medical establishment. This progressivism attracted staff who were committed to workplace equality and diversity as well as liberal ideas about health care. The organization clearly supported women in the medical workplace, with large numbers of women physicians on staff during an era in which few physicians were women anywhere. They were also clearly committed to physicians engaging in career activities involving academic research and teaching. These points are evidenced in the HCO mission statement:

> We support our clinical staff members in teaching, clinical research and community activities, including those that aim to reduce suffering among the most needy members of our society. . . . [We care for patients] in a spirit of teamwork with our colleagues and we are committed to creating an environment in which all staff are valued for their contribution and in which diversity and change are welcomed.

One important issue raised in this discussion is whether supportive culture is exceptional to HCO, or common to other large organizations. This subject is taken up in a partial way below by examining other organizations in the region. Further, the evidence from paper 1 shows that physicians in large medical organizations systematically work fewer hours when compared with those in private practice. Still, the underlying contributions of culture, structure, or scale, cannot be untangled with the data currently available.

The role of reward systems

The reward system also influences access to different schedule and career options. At HCO, the reward system was designed in a way that adjusted for the relative contribution of those engaged to varying degrees in core clinical work, as well as those engaged in other tasks that were valuable to the organization. The combination of salary-based pay and a piece-rate

bonus system at the time I studied HCO appeared to lend support to individuals' efforts at non-traditional careers.

In discussions it emerged that direct physician ownership, in which physicians' incomes all depend on the profitability of the business, tends to inhibit non-traditional careers because of the overwhelming peer pressure from other partners to contribute to clinical revenue. Anyone reducing their clinical load to pursue another activity is likely to be resented by the other staff as a result. On the other extreme, a straight salary system involves much less productivity pressure both in terms of hourly productivity and overall productivity. This salary approach therefore generally facilitates career options to the extent that clinical part-timers are simply paid proportionately less so that full-time colleagues do not feel that the presence of part-timers is hurting their take-home pay.

However, straight salary also generates resentment of part-timers from some of the regular full-time physician staff. When one physician transitions to part-time, the rest of the staff end up having to take on the extra patients that result, leading them to bear an increased workload in the short run. This situation is derogatorily called 'dumping' in the backroom vernacular of practicing physicians. When this occurs under straight salary, those physicians who bear the increased work receive no additional compensation for it. One physician in a private-practice arrangement explained further:

> When someone goes half-time, that person's patients aren't going away. Health issues still come up on Fridays when they aren't supposed to be there.. . . I spend more time covering that person's patients. I'm picking up their slack.

The compromise approach taken by HCO that appears to correct this problem to a large degree is a base salary with a piece-rate bonus. Under this system, physicians receive a flat salary for most of their annual income, which is benchmarked to regional averages for their

specialty. However, they received a bonus of up to around one-third of their total income based on their productivity. The measure of productivity is based on Relative Value Units (RVUs), a standardized measurement of productive value used throughout the health services sector. For primary care physicians, RVUs roughly correlate with the number of patient visits. In addition, administrators receive a guaranteed bonus on top of their salary and productivity components.

This partial productivity-based compensation means that the more patients a physician sees, the more that physician is compensated. As a result, the people who would have felt like they were getting 'dumped on' by other physicians now are more amenable since they get paid on the margin for each extra unit of work. (Of course there are many other ramifications of these different pay systems that go beyond the scope of this paper.)

Comparing across organizations

Since these systems depend to a degree on the presence of large scale for their effectiveness, their expansion is likely to both accompany and be limited by the spread of large medical practice organizations. To gain some sense of the generality and variation in these systems across organizations of varying sizes and structure, I examined similar practices in three other relatively large organizations.

These three organizations differed from HCO and from each other in several respects. They ranged in size from 30 physicians to over 400 physicians, and each had a somewhat different structure and logic. While all three were centered on outpatient care, one was a standard large multi-specialty medical group, the second was a large multi-specialty medical group that also encompassed a hospital, and the third was a primary care-only group that had internists, pediatricians, and gynecologists on staff (no surgeons, psychiatrists, medical subspecialists and so forth). Further, one was not-for-profit while the other two employed

physicians who were also shareholders in the professional corporation. None were true private practices in the sense of being structured as strict partnerships.

Turning to the internal systems that are the focus of this paper, these three organizations showed many of the same features but with some variations on each theme. For example, regarding the challenge of following patients in the hospital, one of the organizations used a hospitalist service like the one at HCO, but a second had evolved a system of 'hospital duty.' This required physicians to each rotate through one-week blocks of doing hospital rounds for all of the patients they and their colleagues had in the hospital. During this time they saw fewer patients in the regular office. Hospital rounding was therefore eliminated for every physician during most weeks—dramatically freeing up their schedules just as had been the case at HCO.

The schedule and career options for physicians in these three organizations also varied. When asked why physicians came to these organizations, respondents in all three clearly said that quality of life, schedule, and 'lifestyle' were important factors.[25] A notable variation included one organization where part-time practice was explicitly disallowed. Yet that rule was rationalized as necessary to enable a better schedule for *all* the physicians in the group. Another organization did not discourage physicians from working part-time in order to achieve work-family balance, but *did* discourage their doctors from doing much teaching, research, consulting, or other substantial *economic* activities because they thought this distracted from the core clinical responsibility.

In sum, there were some notable differences across these large practice settings. This likely reflects the nascent state of organizational evolution in health services. However, interviews at these organizations indicated that the combination of systems within them

[25] "Lifestyle" is a term that was used by many interview respondents rather loosely to denote issues involving reduced hours, schedule concerns, family and really everything outside of clinical practice.

collectively contributed to accommodating schedule and career scenarios that were highly valued by their physicians. Tellingly, informants at all three organizations described the position of their groups in the physician labor market as strongly defined by these schedule and career characteristics. When perspective hires compared them to the more numerous options in private practice, this was one of the key attractions they possessed.

CONCLUSION

This paper examined the processes through which a large medical practice organization was able to generate restructured physicians schedules. Interviews showed that systems were acting to remove uncertain elements of work away from physicians, making their schedules more controllable, as well as decoupling the patient-physician relationship, which generated options for flexibility in scheduling. The changed schedule, in turn, opened up career options and the ability to transition between career activities over time.

These organizational systems were not developed for purposes to do with schedules or careers *per se*, yet they were found to be serving such functions. This mirrors the fact that large medical practice organizations themselves did not evolve in response to pressures from the labor market to generate accommodating schedules and career options—yet they have turned out to play a key role in providing them. These organizations, and the systems within them that support schedules and careers, emerged largely as a result of efforts to improve the quality and cost of health services.

Table 3.1: Systems that enable schedule restructuring

Function	Type of system	System description	Impact on physician efficiency	Impact on physician schedule
Specialization	(a) Task division of labor	Use of nurse practitioners (NP)	No longer do certain routine tasks, can focus on others	Flexibility in seeing patients
	(b) Spatial division of labor	Use of hospitalists	Less travel to and from hospital during day, or when on call	Reduces time burden & uncertainty during day and in off-hours
		Use of extended care team	No travel to nursing homes or rehabilitation clinics	Reduces time burden & uncertainty during day and in off-hours
	(c) Temporal division of labor	Use of team doctoring for coverage, call	Smooth out variability in office visit scheduling	Flexibility in seeing patients
		Use of urgent care clinic	No longer see patients with urgent problems on evenings/weekends	Reduces time burden & uncertainty during off-hours
		Use of nurse triage phone system	Less work seeing patients with routine/ non-medical issues	Reduces time burden & uncertainty during off-hours
Function	*Type of system*	*System description*	*Effects with respect to core specialization*	
Coordination	(a) Information systems	Computerized medical record	Information flow between regular physician and all other units (NP, hospitalist, extended care team, urgent care providers, triage nurses)	
	(b) Standard-ization of services	Clinical protocols, guidelines, review	Standardize services, ensuring quality across different providers with whom patient may interact	
		Norms governing practice style	Standardize services, ensuring quality across different providers with whom patient interact	
	(c) Client expectation management	Patient education, communication	Patient as 'input' behaves in more predictable way when interacting with all other units besides their physician	
Function	*Type of system*	*System description*	*Impact on physician efficiency*	*Impact on physician schedule*
Buffering		Centralized operations and administration	Fewer operational and administrative distractions	Reduces time burden and uncertainty

APPENDIX 3.A: INTERVIEW SUBJECTS

Subject type	Age	Sex	Status
HCO physicians	60-70	M	FT
	40-50	M	FT
	40-50	M	FT
	40-50	F	PT
	50-60	M	FT
	40-50	M	PT
	50-60	F	PT
	40-50	F	FT
	60-70	M	PT
	30-40	M	FT
	30-40	F	PT
	30-40	F	PT
	30-40	F	PT
	50-60	M	FT
	30-40	M	FT
HCO Administrators	n/a	F	n/a
	n/a	M	n/a
	n/a	M	n/a
	n/a	F	n/a
	n/a	F	n/a
External physicians	30-40	M	PT
	50-60	M	FT
	50-60	M	FT
	40-50	M	FT
	50-60	M	FT
	30-40	M	FT
	30-40	M	FT
	70-80	M	Retired
	60-70	M	Retired
	70-80	M	Retired
	60-70	F	Retired
	40-50	F	FT
	50-60	F	FT
	30-40	F	Not practicing
	40-50	F	PT
	70-80	M	PT
	40-50	F	Not practicing

External physicians interviewed through state medical association or referral.

APPENDIX 3.B: CAREER PROBLEMS IN THE LARGE ORGANIZATION

While large organizations opened up many career options, respondents also reported that they generated career problems of their own. Beyond the loss of autonomy, some respondents also noted a sense that the organization generated a *routinization of work.* This could made work less interesting and intellectually stimulating. What appeared to be more troubling to physicians was the *lost quality of their patient relationships.* The decoupling of the individual doctor-patient relationship was giving physicians less time to connect in an emotionally satisfying with way patients. One physician characterized this relationship quite bluntly:

> In the large group, there is a sense of being able to switch one physician for another, to make them interchangeable. This makes it much harder to gain satisfaction through continuous relationships. I think there's a pretty direct trade-off between continuity of care in this sense, which is so rewarding, and achieving a balanced lifestyle by sharing your responsibilities with other physicians. In a big group, you get lower continuity, and lower satisfaction if that's your source, but the scheduling is more regular.

Many physicians mentioned relationships with patients and their families as sources of satisfaction. Yet the quality of these relationships could be eroded by the time pressure and the fact that patients more often were seen by a team rather than an individual physician. While this issue was also raised by non-organizational physicians, some of those in HCO attributed it to the organization.

The *unprofessional feelings* deriving from the employment relationship also troubled some physicians. Several expressed reservations about the need to take on a worker-like role with respect to their employer. For example, one physician in a large organization disliked the need to negotiate detailed schedule issues with the organization:

> There are advantages and disadvantages to the employment-based practice. But the professional and the employee are not mutually exclusive. . . but, well, nitpicking about how many hours you worked begins to sound like a worker, not a professional. Professionals are supposed to be above that, committed to the care of patients.

The part-time practice option, while highly valued, was also seen by some as dissatisfying because for them it generated *feelings of guilt toward patients* when they were taking time away from their practice. The worries and puzzles of patient ills preoccupied some physicians so that they never really felt free of their patients. One physician explained:

> What happens with part-time, is that because I'm conscientious, I'd spend more time both with the patients and researching about their problems. A lot of physicians do have that quality, and part-time often becomes full-time. And even if it doesn't, how do you turn it off? You have patients out there in the world, and they have problems and you want them to be OK. After a while, you may not actually be in the clinic, but it's on your mind and you're not free of it—the responsibility.

Physicians also reported *tension between full-timers and part-timers.* While a physician's team and organization may be supportive of the decision to practice part-time, the wider culture of medicine is a much more mixed environment. Physicians talked about how they felt that some colleagues in the wider profession seemed to view their interest in constrained practice to only be valid under narrow circumstances, such as research responsibilities. The point of view seemed to be not so much that constrained-practice physicians were of lower quality, but that they were being selfish.

Another potential complication of careers in large organizations comes from the very *lack of pre-defined career structures* to guide growth and progress within the organization.

Professional careers are often noted to lack clear organizational progression steps, and have in fact become ideal-type models for 'careers of achievement' (Zabusky and Barley, 1996) in accounts of independent self-directed career patterns. In one sense, the large medical organization provides the opportunity for a career of achievement, rather than advancement, all the while with the convenience and stability of staying within one organization. An individual has a lot of latitude to make career changes in the pursuit of a wide array of career activities, and those activities need not be sequenced in any strongly ordered way like the career ladders of internal labor markets.

The absence of pre-defined career structures can be difficult for some physicians. The 'career of achievement' is actually quite at odds with the structure of physician careers up until age 30. During that early training period, from high school through residency, careers move upward in lock-step through a series of competitive hurdles with obvious objectives. Coming from that environment, the physician starts practicing medicine in an open-ended environment, with no clear externally-defined competitions or hurdles or rules other than be successful at your practice and take on other career activities as you like. For example, one physician in a large medical organization (not HCO) reflected thus:

> For a lot of young physicians, now and in the past, I think there is a career crisis that happens when you start out in a group. When I first came to [this organization] and started, I thought, "Oh my God, I could die in this office." There's no clear career progression.

Similarly, one physician at HCO acknowledged that physicians making the transition from private practice to the large organization can be challenged by the lack of clear goals toward which one should strive. In the private practice, the accrual of patients and concomitant wealth is an obvious and continual goal. But in the large organization, other things have to take the place of that:

> The transition from solo or small group practitioner to being an employee without sweat equity is major. There's a leveling of income and status along lines of tenure, and that's hard. . . . So then where do careers go in these organizations? You can go into administration, but . . . I think this is an ongoing issue.

Finally, the increasing focus on productivity, while ameliorating resentment of patient 'dumping,' has the additional effect of discouraging formerly subsidized activities like *teaching and research*, which may have provided positive externalities to everyone in the organization by enhancing the organization's reputation and standing in the community.

> . . . if you're off teaching, then your income is lower. Before [with straight salary], teaching did not affect your compensation at all. It was seen as part of your job before. There was no sense that gee, you're off teaching and making as much money as I am seeing more patients, that's not fair.

Under a straight salary system, those who had been doing teaching and research had their career options more fully supported. After the move to productivity pay, these career activities receive less of a subsidy—although they still receive some, and many physicians appear to be continuing to do the same activities they did previously. The current approach at HCO is to strike a balance that encourages both overall schedule flexibility as well as teaching and research activities. Administrative career activities are compensated separately with a guaranteed bonus.

CONCLUSION

Where do physicians gain access to flexible schedules and career options? This question is important because the physician workforce is changing in ways that are generating great demand for these job attributes. The surprising answer pursued in this dissertation is that the large bureaucratic organization plays a key role in fulfilling that demand. This *bureaucratic flexibility* is possible because the large organization solves a fundamental schedule and career problem faced by physicians: how to create and guarantee time away from their patients. The same systems that large medical organizations developed to improve the cost and quality of health services also serve to shift scheduling control from the hands of the patients to those of the physician. The result is an opportunity to make short-term and long-term changes in a physician's schedule, allow a mix of clinical and non-clinical activities, and permit dynamic and varied career paths.

In this concluding section, I summarize the findings from each of the three papers and briefly review the key contributions of the dissertation in terms of understanding professional careers and labor markets. Lastly, I raise some unanswered questions of interest for future research.

Summary of findings

This dissertation has investigated the role of large medical organizations in fulfilling the needs and interests of physicians in the labor market. Each of the three papers contributes separate empirical evidence toward the argument that the large organization, while constraining autonomy, expands the schedule and career options of physicians in ways that are valued within the current medical workforce.

Paper 1

The first paper used national survey data to investigate labor market selection into HMOs, the archetypal large medical practice organizations. First, I verified that HMO employment involved a reduced work schedule as well as the curtailment of autonomy. HMO physicians worked 5 fewer hours per week compared with their non-HMO employee colleagues, and 10 fewer hours than physicians who were practice owners. They also worked fewer night and weekend hours, and their reported hours preferences were also lower than those of other physicians.

Women physicians were about twice as likely to be employees of HMOs, even after controlling for ability, age, medical specialty and other factors. While women worked fewer hours across the board, in the HMO they worked the fewest. In regressions, weekly work hours were found to mediate the impact of sex on HMO membership, suggesting that hours play a role in the over-representation of women in HMOs. I also examined the impact of spousal characteristics on a physician's chances of HMO employment, on the theory that those characteristics would impact the physician's interest in the reduced schedule available in the HMO. For male physicians, characteristics such as spousal income and occupation did influence their likelihood of working for an HMO, though for female physicians they did not.

Finally, I also looked for evidence that the gender differences in HMO membership might be the result of variation in ability or status, or of discrimination on the demand side of the labor market. Various ability measures, including MCAT scores, had no observable effects on selection. With regard to discrimination, I examined whether respondents reported losing a more desirable position at the time they took their current one. I found no support for discrimination in explaining the over-representation of women.

In sum, the first paper found differences in the job characteristics and demographic makeup of HMOs that were consistent with labor market selection based on individuals choosing those settings to obtain better schedules. The evidence was not consistent with alternative explanations involving ability bias or discrimination on the part of medical practice organizations. However, the cross-sectional and high-level nature of the survey data prevented a serious assessment of causality. These findings therefore provide a baseline for a more rigorous examination of the dynamics of individual career behaviors and the organizational processes that impact them, conducted in papers 2 and 3.

Paper 2

The second paper used longitudinal survey data within one large medical practice organization to examine if and how large medical organizations accommodate differing career interests, and what the primary consequences were for individual physicians. The first observation was how common non-traditional career paths were in the organization. Over the course of a 15-year period, the great majority of physicians had done one or more of a set of alternative career activities including part-time practice or an administrative role. Exit rates from the organization were relatively high, although the bulk of physicians who had left went to another large medical organization rather than a small private practice.

Using interviews done in the organization, I developed a typology that classified individuals based on their career orientations, or 'career values.' The four types were work-life balance, career advancement, pragmatic security, and organizational ambivalence. I then categorized survey respondents into one of these four types based on their earlier (1987) survey responses. Empirical analyses tested whether these individual values were reflected in individuals' subsequent career activities—to the extent that they were, then the organization

would appear to be accommodating individual interests. In many cases paths reflected values as expected. For example, balancers were most likely to go part-time, and advancers to go into administration.

Regressions showed that physicians who had taken career paths that fit their values were on average more satisfied with their careers relative to those who had not. This lent strength to the idea that being able to pursue one's career interests was of consequence to HCO physicians. Further, no career path on its own was associated with lower career satisfaction, suggesting that it was not the case that the organization was forcing certain physicians into less-desirable career paths. Finally, while the career paths were strongly related to annual salary differences, hourly wages looked very similar across the career activities.

Overall, the second paper found that within this organizational population physicians could exercise a high degree of choice over their careers. The ability of individuals to pursue their own career interests in this setting helps explain the apparent success that many large medical organizations have had in satisfying members of this highly autonomous occupation. Yet how exactly was the organization able to achieve this level of flexibility in schedule and career activities? The third paper explored this question in detail.

Paper 3

The third paper examined the systems within HCO through which the organization was able to provide restructured schedules and expanded career options to physicians. I organized the analysis in a way that abstracted from the particular details of these systems to focus on their general functions. These functions included both these systems' *intended* purposes to further organizational goals, and their largely *unintended* consequences for individual schedules and careers.

A set of *specialization* systems were identified which had the effect of partially decoupling the physician-patient relationship, and which in turn had consequences for schedules. These systems reduced the dependence of the organization on core physician staff for providing services at the particular moment when a patient needed help. Hence physicians were given more flexibility in how to arrange their schedules. *Coordination* systems contributed to schedule restructuring by supporting specialization, and also by opening up other possibilities for dividing tasks based on specialization. *Buffering* through centralization also provided greater scheduling flexibility because it removed certain tasks from the portfolio of the physician's responsibilities, thus reducing the temporal uncertainty involved in these tasks.

For physicians, work in this setting represented a shift from temporal uncertainty to planning capability, and therefore from vulnerability to safety. Physician schedules that would have been hostage to patients came instead to be more under the physician's own control, subject to negotiation with others in the organization. Schedule restructuring also expanded the set of feasible career options, and the flexibility to move in and out of them. This was true because switching to a different career activity required ensuring access to dedicated time not involved in seeing patients. The organizational systems allowed that time to be available.

In sum, the third paper uncovered the organizational processes through which schedules and careers were transformed. These systems at HCO decoupled physician and patient, opening up opportunities for flexibility and change. Three other large medical organizations investigated showed variations on the same logic. Administrators at all the organizations queried said they recognized that the physicians they attracted were particularly interested in these schedule characteristics because they accommodated other career interests as well as family roles.

The professional labor market model

These empirical findings contribute toward a model of the professional labor market that differs from the one implied by much of the existing writing on professions. Where others have emphasized convergence in terms of individual interests and organizational influences, I emphasize *divergence* and the importance of differences. The resulting model incorporates four propositions that help account for the dynamics of the contemporary medical labor markets. In brief, these are:

1. Individual professionals have differing interests that they bring to the labor market and to their careers. These interests have to be modeled in order to understand the role of organizations in the professional labor market.

2. The family plays a key part in professional labor markets and careers, because differing family roles are incorporated into individual labor market interests. Family factors are highly salient in the professions, where time demands contribute to frequent work-family conflicts.

3. Large organizations generate positions that differ on multiple dimensions from those in private practice. In the case of physicians, large organizations represent a trade-off: lower work autonomy but greater schedule flexibility and career options.

4. An understanding of the nature of work undergirds this model of the professional labor market and career. Without it, the crucial role of the large organization with respect to schedules and careers would be missed.

Remaining questions

This thesis has raised several questions that remain to be answered. Three of the most important questions are reviewed here and suggested for future research. First, *how do large practice organizations affect the quality and cost of health services?* This question is perhaps the elephant in the room throughout this dissertation. Organizations are likely to reduce variation in the services delivered to patients, relative to traditional private practices, but their exact net impacts on quality or cost are unlikely to have clear answers. Many health services researchers as well as medical leaders are focused on these questions of cost and quality. My

emphasis, in contrast, has been on career issues. A natural direction for future inquiry would be to link these career issues to cost and quality outcomes. One approach would be to incorporate traditional human resource variables. For example, organizational career and schedule policies impact on physician selection, retention, morale and effectiveness, which in turn affect the cost and quality of services.

Will the large organization always involve a mix of expanded schedule and career options and curtailed autonomy? First consider the large organization's provision of different schedules as compared with private practice. As discussed in the third paper, scale on its own is a necessary but not sufficient condition for schedule restructuring. If physicians lost enough labor market power, for example through greatly expanded supply or labor substitution, then organizations might find it economical to enforce rigid schedules on doctors, and in doing so find little resistance. As a result, it is possible that large organizations would cease to provide reduced or flexible schedules. However, this scenario would represent a significant departure from the present level of physician power in the labor market.

The large organization's association with lower autonomy as compared with the private practice may be eroding more quickly. Even in private practice, incursions into the physician's work have increased greatly as a result of more regulatory oversight and restrictions from government as well as health insurers. The result may be that physicians in the future perceive less of a difference in autonomy between private practice and the large organization; therefore other factors such as schedule or career options may come to the fore in their evaluation of these

labor market alternatives.[26] Future research should look systematically at the characteristics of doctoring positions across a range of organizational types and sizes, attending to factors that impact labor market power such as medical specialty and geographic location, as well as factors that directly shape medical positions such as organizational systems and culture.

Do large organizations in other professional occupations also provide more schedule control or flexibility? The characteristic problem of clients driving a practitioner's schedule is shared by many other professional services, such as law, accounting and financial services. Do large organizations function similarly with respect to schedule in these occupations? In law firms, large organizational size is anecdotally associated with *longer* hours—even though there is at least in principle the same potential to develop systems such as those outlined here which could accommodate schedule restructuring.[27] Alternatively, it may be that medicine's combination of temporal urgency, individual service, and task complexity generate a unique link between size and schedule restructuring. Comparative research to assess this issue would present a challenge because of the need to take into account differences in both institutional regimes and work content across occupations.

[26] However, if large medical organizations further develop methods of accommodating schedules and careers, it will be tempting for observers to attribute those structural developments purely to pressure from the changing labor market. Such an attribution would be misplaced, since this research has shown that those organizational systems that currently accommodate individual interests originated not with the intention to improve physician careers, but rather as a byproduct of efforts to improve the quality and cost of patient care.

[27] The key to this variance may lie in the fact most large law firms serve corporations and not individuals. As a result, the market for legal services has a size-matching dimension, in which large corporate clients—who can demand very high levels of service responsiveness—tend to retain larger law firms that can handle their broad range of needs. In medicine, by way of contrast, the client receiving services is always an individual, so size matching is not important in the same way. Other professions that focus on individual services and share some of the scheduling conditions of medicine—such as psychologists, personal tax accountants or private bankers—might also be settings where organizations function similarly.

Contributions to theory and practice

The topic investigated in this dissertation—the role of the organization in the professions—is of central importance to both theory and practice. The question of professions and organizations has long been seen to have theoretical importance, because it could serve to locate a boundary around bureaucracy. In other words, it might help answer the question of whether all work will ultimately be subsumed under the gloomy auspices of bureaucratic constraint—a perspective essentially shared by Weber (1947) and Marx (1976)—or whether the professions represent a different and expanding logic that resists organizational control (Parsons, 1968; Freidson, 1970a)? Yet I argue that the two sides of this debate share the questionable assumption that large organizations are essentially defined, in the eyes of professionals, by the loss of control. What if the equation was expanded to include other variables? The organization might then come to be viewed in a contingent light involving *trade-offs* of control and other job or career dimensions.

This perspective, if borne out, drives a modest wedge in the structure of the debate about bureaucracy. It suggests that in the current era the interpretation of bureaucracy might best be understood as dependent on individual differences rather than driven by universal occupational logic or orientation. Some segments of the professional workforce may favor the trade-off afforded by the large organization, rather than seeing it as categorically undesirable. In essence, the professions-organizations debate has missed the importance of changes in the structure of families and the professional workforce, changes that have ushered in new preferences and interests in other features that the organization has to offer.

The role of the large bureaucratic organization in the professions is also of crucial importance for policy and practice, because organizations are strongly implicated in addressing the needs of a changing workforce. We must understand how organizations meet those needs, as well as the dynamics that drive them to do so. The importance of this analysis is increasing, since the demographic changes underway in the professions are only beginning to reverberate through those labor markets. The medical workforce will continue to evolve as women and dual-career physicians of both sexes who are now in medical school and residency begin practicing. These physicians, under tremendous time pressures, are likely to seek schedule and practice arrangements that allow them to accommodate a range of work and non-work career options. To the extent that the large organization retains advantages over other practice settings in providing these options, it is likely to serve a vital—yet for the most part unintended—role in the medical labor market.

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