

# From Iron Cage to Iron Shield? How Bureaucracy Enables Temporal Flexibility for Professional Service Workers

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**T**his paper develops a model of how organizations influence the temporal flexibility of professional service workers. The model starts by identifying a key source of temporal inflexibility for these workers: an inability to hand clients off among one other. Hand-offs are impeded by high levels of client-to-worker specificity, stemming from three common characteristics of professional service work. The organizational processes that reduce that specificity, and therefore facilitate hand-offs, function by (a) reshaping client participation and expectations about the nature of their service interactions, (b) partly standardizing client-related work practices, and (c) facilitating the sharing of knowledge about clients between workers. The presence of these organizational processes represents greater bureaucracy—an interesting twist, given that they create more temporal flexibility for workers. The model is grounded in field research conducted with primary care physicians, and is also evaluated using a unique survey data set of physician organizations. Implications are drawn for the study of temporal flexibility across professional services in general, as well as for recent attempts to rethink the meaning of bureaucracy for workers.

*Key words:* temporal flexibility; professional service work; client hand-offs; bureaucracy; organizational processes

Scholarly attention to the problem of worker temporal flexibility has burgeoned in recent years (Schor 1991, Bailyn 1993, Kossek and Ozeki 1998, Presser 1999). A key challenge has been identifying the characteristics of those organizational settings where workers have relatively more scope to adjust their work schedules to accommodate personal needs and interests. One way to approach this challenge is to study organizations that offer employee benefits intended to increase workers' temporal flexibility. Representative of this approach are Osterman (1995) and Glass and Estes (1997), who discussed the organizational correlates of flexibility benefits and related human resource policies that promote work-life balance. Others focused on organizational cultures and norms that hinder or enable flexibility (Epstein et al. 1999, Perlow 1999, Wharton and Blair-Loy 2002).

I take a complementary but different approach. Following the recent resurgence of studying the nature of work within organizational theory (Barley and Kunda 2001), I have pursued an answer to the temporal flexibility question that starts from an understanding of how some limits on flexibility are rooted in particular types of work. For example, the work performed by workers in a wide range of occupations requires a prompt response to unpredictably timed events, greatly restricting the temporal flexibility of workers: Think of computer administrators fixing crashed networks and physicians responding to patient illnesses. This nature-of-work approach holds the promise of gaining a deeper understanding of structural linkages among work requirements and practices, organizational processes, and temporal flexibility (Rapoport et al. 2002).

In taking this approach, I focus on a particular category of work involving the provision of professional services to clients. This important and growing category encompasses approximately 20%–25% of the U.S. economy, yet it remains much less studied than manufacturing or routine services.<sup>1</sup> Professional service work (PSW) is problematic for temporal flexibility because it requires workers to respond to client needs that are themselves often temporally unpredictable. This might not be a problem in itself if it were the case that workers could easily substitute for one another in providing those services. Yet often in professional services there exists a high level of specificity in the relations between worker and client, promoting a one-to-one correspondence between them. As a result, work that arises at a particular moment in time for a given client requires prompt attention by the corresponding worker, severely inhibiting temporal flexibility from the perspective of that worker.

I build a simple model that starts with these flexibility-limiting elements of PSW as scope conditions. Under those conditions, the model identifies organizational processes that increase temporal flexibility by enabling client hand-offs between workers. These processes allow hand-offs to take place by essentially weakening client-to-worker specificity. In an interesting twist, the organizational processes that enable hand-offs consist largely of rules and procedures that represent a greater level of bureaucratic intensity. This inverts the typical relationship between bureaucracy and flexibility, in which bureaucracy is associated with greater constraint on individuals and *reduced* flexibility (see Adler and Borys

1996). Instead, here bureaucracy serves to shield workers from client-based constraints on temporal flexibility and as a result increases that form of flexibility. This impact on flexibility may be purposeful on the part of the organization, or, as in the cases I observe below, quite unintended.

I developed this model of how organizational processes influence worker temporal flexibility in a multi-method study of primary care physicians (PCPs). The work done by PCPs lies near the extreme end of both unpredictable client demands and client-to-worker specificity, making it well suited to the topic. The model first emerged from an inductive study comparing physician flexibility across a set of organizations in one metropolitan locale (Study 1), and it was further evaluated using archival survey data from a unique national sample of physicians and their organizations (Study 2). After the temporal flexibility model is described in the next section of the paper, the two studies are reviewed. Illustrations from Study 1 are presented to unpack the components of the model, followed by findings from Study 2 that support the model's bureaucracy-flexibility inversion. Though developed in the physician context, the model generalizes to other PSW contexts.

### Temporal Flexibility and PSW

I use the term *temporal flexibility* to mean the extent to which workers have an ability to control the timing of their work. This concept incorporates both longer-term scheduling of sustained breaks from work, as well as shorter-term control over the timing and sequencing of tasks during the day and week (Golden 2001, Evans et al. 2004). To the extent that extremely high work demands limit the control of timing by taking up nearly all waking hours, this concept also encompasses control over total work demands. Growing workforce interest in temporal flexibility is related to the rapid rise in dual-earner families, and the movement of women into temporally demanding professional occupations such as medicine, law, academia, accounting, and management (Jacobs and Gerson 1998, Moen 2003). These linked trends imply a shift in the division of household labor away from the male breadwinner–female homemaker model that previously allowed workers to devote much of their time to their work (Waite and Nielson 2001). New family structures put strain on the schedules of professionals, generating interest in flexible schedule and career options. More generally, there now appears to be an increased diversity of scheduling priorities and associated career interests in the professional workforce, particularly within younger generations (Hull and Nelson 2000, FWI 2005).

Though demand for temporal flexibility has risen, the availability of jobs with flexibility appears to remain limited (Galinsky et al. 2004). This may be partly a result of

managerial biases and norms against providing worker discretion (Perlow 1999, Batt and Valcour 2003, Eaton 2003); the role of bureaucratic organizations themselves in shaping job flexibility remains largely unclear. Some suggest that bureaucratic organizations limit workers' temporal flexibility, and that temporal freedom can be achieved through smaller-scale collaborations, independent contracting, and careers outside and between organizations (Meiksins and Whalley 2002, Heckscher 1994, Arthur and Rousseau 1996). Others suggest that organizations actually buffer workers from the demands faced by independent operators, and that the latter's flexibility is often exaggerated (Zerubavel 1979, Evans et al. 2004).

This confusion may stem in part from a lack of specificity about where temporal flexibility problems come from in the first place. Here, I focus on one important source of temporal flexibility problems for many professional workers: the nature of client service work. I argue that temporal flexibility is impeded by the unpredictable timing of client needs combined with the client-to-worker specificity that ties those needs to particular workers. Although it may sometimes be possible to alter the timing of clients' demands (Epstein et al. 1999, p. 135), the scope for such alteration is often limited by factors beyond the professional's control. For example, there are limits to what a doctor can do about the timing of patient illnesses, or what a lawyer can do about the timing of legal actions against clients. On the other hand, the extent of client-to-worker specificity may be influenced greatly by organizational processes that enable effective client hand-offs between workers.

### Three Features of PSW that Affect Client Hand-offs

Client hand-offs in PSW involve the transfer of responsibilities and roles between two or more professional experts. The responsibilities and roles transferred are always in reference to the client, although they also may reference a team providing services to that client. Because the exact dimensions of client needs are not known ahead of time, the responsibilities transferred tend to be relatively expansive.

If client hand-offs were feasible and effective, work-to-client specificity would be minimal, yet three common PSW features conspire to generate specificity and therefore limit effective hand-offs. The three features relate to client participation in production, variation in worker practices, and knowledge of the client. Insight on each of these features can be drawn from existing research in related fields and applied to the context of PSW hand-offs and specificity. These features, discussed below, are summarized in the left-hand column of Table 1.

*Client Participation.* Hand-offs pose a threat to the involvement of clients in the production of professional

**Table 1** The Role of Client Hand-offs in Enabling Temporal Flexibility for PSWs

Work characteristics that generate worker-to-client specificity	Organizational processes that reduce specificity, thereby enabling hand-offs
<p>A. Client participation necessary in service production</p> <ul style="list-style-type: none"> <li>• Interpersonal trust contributes to client participation</li> <li>• Client's service expectations shaped by past interactions with worker</li> </ul> <p>B. Variation in work practices across individuals</p> <ul style="list-style-type: none"> <li>• Divergent practices can generate conflict among workers handling the same client</li> </ul> <p>C. Challenges to sharing knowledge about clients from past interactions</p> <ul style="list-style-type: none"> <li>• Clinical knowledge (the how-to of PSW) varies across workers</li> <li>• Hard to identify current information that will be valuable to future service encounters</li> </ul>	<ul style="list-style-type: none"> <li>• Common service-encounter routines across workers serve as interaction rituals to build client trust</li> <li>• Organization communicates to client what to expect in future service encounters</li> <li>• Rules and routines partially standardize work practices, minimizing scope for conflict among workers</li> <li>• Metaroutines offer guidance on when it is appropriate to depart from standardizing rules and routines</li> <li>• Knowledge management tools create common framework to enhance knowledge sharing</li> <li>• Standardizing use of knowledge management tools reduces variation in information availability complete and updated records</li> </ul>
<p style="text-align: center;">▼</p> <p>Resulting worker-to-client specificity impedes hand-offs among workers</p>	<p style="text-align: center;">▼</p> <p>Enhances hand-off abilities, but also represents more bureaucracy for worker</p>

services. Clients themselves are essential inputs into the production of professional services (Fuchs 1968, Mills and Morris 1986), and although client involvement is voluntary, greater involvement is often an essential ingredient in the quality of services rendered (Ramirez 1999). This is true, for example, when a client's confidential information needs to be shared with the worker to identify a superior solution to the client's problem, or when the client's own reasoning and motivation need to be considered in crafting a solution. Because involvement is partly a function of interpersonal trust between client and worker (Freidson 1984), hand-offs that sever interpersonal trust built up over time can undermine client participation. In the extreme, this could lead the client to exit the relationship.

In traditional professional service encounters, interaction rituals between worker and client serve as important symbols of quality for the client (Goffman 1967, Siehl et al. 1992). These symbolic enactments provide reassurance in the face of the tremendous information asymmetries between client and professional worker (Sharma 1997), and reinforce the legitimacy of professional authority and expertise (Collins 1981), hence such rituals serve a central role in maintaining trust and participation on the part of the client. Hand-off events that disrupt those rituals will undermine their beneficial effect of facilitating participation and minimizing conflict between client and worker.

*Variation in Worker Practices.* Though professionals trained in the same field may all share an underlying domain knowledge, they commonly differ in style and

approach to solving similar problems and interacting with clients. This worker practice variation is an increasing focus of inquiry for professionals themselves (Kohn et al. 2000; also see Adler 2006). With regard to client hand-offs, such variation complicates the coordination of professional activities necessary to manage the hand-off. Two workers involved in a hand-off who vary in their views on the best way to conduct work related to the client raises the likelihood of a dispute arising between them: Worker variation implies that hand-offs will generate more conflicts between workers.

At the root of this work practice variation is the fact that much of PSW consists of knowledge creation—by making sense of client needs. This activity forms the basis for recommendations and expert services rendered to clients. Common domain knowledge—that is, theory developed around a professional domain, such as medicine, law, or architecture (Abbott 1988)—may help reduce variation associated with these knowledge-creation activities. However, idiosyncratic clinical knowledge—the knowing-how (Ryle 1949) required to assess a client's needs and formulating an action plan in practice—can lead to profound differences in knowledge creation that complicate hand-offs between workers.

*Knowledge of the Client.* Knowledge of the client is crucial to service production, and although some of that knowledge is brought to a particular PSW encounter by the client, much of it is brought by the worker as he recalls details and interpretations he created in past encounters. This implies that knowledge created in one service encounter is a key input in subsequent encounters, creating what Crowston (1997) termed

a prerequisite dependency constraining client transfers between workers. When client knowledge can be codified—meaning converted into a systematized form that facilitates being written down, spoken, or otherwise communicated—it can be more readily transferred.

Carlile (2002) highlighted three aspects of knowledge that impede sharing in general and that may also apply to the hand-off context: syntactic, semantic, and pragmatic. First, the complexity and volume of information being transferred can make it challenging to achieve an efficient syntax and format for sharing between workers (Galbraith 1973). Second, even when a common lexicon is established, barriers in achieving a shared interpretation between workers commonly arise due to the contextual and tacit nature of critical knowledge elements (Nonaka 1994, Sternberg 1999). In professional services, this interpretive barrier is of particular concern with regard to the clinical knowledge governing issues such as how to make sense of client needs and conduct client service work in practice (Schon 1983). Finally, workers may see practical or political reasons to resist knowledge sharing or the framework being used to conduct knowledge sharing (Carlile 2002, Bechky 2003), again hindering the effective use of hand-offs.<sup>2</sup>

## Organizational Processes and the Features of PSW

These three features of PSW represent sources of client-to-worker specificity that complicate hand-offs and hinder temporal flexibility for workers, yet they also identify the features of that work that, if altered through organizational processes, might permit a reduction in specificity and an associated improvement in flexibility. I consider the three work features below, focusing at each turn on the generic organization processes that could have such an impact. When describing my findings, I illustrate these features with examples from the PCP context.

*Shaping Patient Expectations.* In theory, high levels of client participation could be maintained in the presence of hand-offs if the client's trust were shifted from the interpersonal level to the level of the organization and its representatives. For this purpose, organizational processes might serve as a replacement for the personalized interaction rituals that generate trust in the traditional professional context. Siehl and colleagues (1992) showed how, in a wide range of service contexts from architects and lawyers to retail stores and fast food, a predictable and consistent routine enacted during service encounters provides a similarly reassuring symbolic function. Part of that routine may serve to directly enhance service production, but in some cases it appears largely ritualistic in nature. In a related vein, Locke (1996) explored ways in which emotional displays are

routinely used by physicians to shape encounters and elicit cooperation from patients.

Furthermore, to the extent that general routines are communicated to clients by the organization in the form of what to expect, they become more explicit in the minds of both workers and clients. This ensures that the very idea of a hand-off is already planted in the minds of clients, and that experiences relating to hand-offs will carry fewer unwelcome surprises for clients. This is a key element of what Mills and Morris (1986) termed client role readiness, a determinant of success in client-worker service encounters. Similarly, Bettencourt and colleagues (2002) showed how some professional service organizations strategically manage client input into the production of professional services.

*Standardizing Work Activities.* Although work styles often differ across professional service workers, variance can be reduced through rules and procedures that constrain action under certain common or well-understood conditions. For example, where the inputs to a service task fit a given set of criteria, a particular routine sequence of steps may be required. The impact of such garden-variety work practice standardization on client hand-offs is likely to be beneficial to the extent that it narrows the scope for disagreement between workers over the correct course of action with a particular client.

Complex professional activities can only be partially standardized or routinized in this sense, however, owing to the ambiguity of client needs and the complexity of professional work practices. Organizational processes that standardize in a more flexible fashion offer more promise in the PSW context. For example, sequences of linked work activities and problem-solving logics can often be identified at the organizational level. These decision protocols and action sequences can form a kind of toolkit to partially routinize complex service work, analogous to the grammar of action described by Pentland and Rueter (1994) in other service settings. They can be configured in different ways to fit specific situations, but their function and meaning are understood similarly across workers. A worker's behaviors are guided by and justified using these protocols, but not in a restrictive fashion.

Another approach to flexible standardization, identified as a metaroutine by Adler et al. (1999), allows for switching between routine and nonroutine situations. Metaroutines help distinguish between those circumstances where a narrower set of rules should adhere, and those circumstances where the rules can be circumvented. Both decision protocols and metaroutines reduce conflict around hand-offs by providing a framework through which workers can understand and interpret each other's decisions about clients.

*Codifying Knowledge About Clients.* Codifying professional knowledge is difficult for reasons described

above, impeding the knowledge sharing necessary for client hand-offs. Nonetheless, tools are being developed across a wide range of PSW settings with the goal of transforming complex and tacit knowledge into a streamlined and codified form for other workers to use (Davenport and Prusak 1998). These knowledge-management systems can enhance learning and performance through the recycling and recombination of knowledge across clients, projects, and business units (Garud and Kumaraswamy 1995, Schultz 2003, Hansen and Haas 2001). Such systems might also improve worker temporal flexibility by enabling client hand-offs, to the extent that this, too, hinges on effective knowledge transfer.

Some studies of knowledge sharing locate these systems within a broader conceptual framework focused on the design and use of boundary objects—tools that hold and transmit knowledge across boundaries between individuals, units, organizations, and occupations. Examples include design drawings used in new product development and medical records used in health-care delivery (Carlile 2004, Osterlund 2004). The availability of these tools and the formalization around their use could improve knowledge sharing in terms of the problematic dimensions outlined above. For example, standardized syntax and format can improve the precision and completeness of codified knowledge elements. Rules and procedures that encourage widespread and consistent use can help workers learn about each other's differences and hence achieve more closely shared interpretations and practice patterns. Though studies of boundary objects tend to focus on knowledge sharing across occupational jurisdictions, they should facilitate hand-offs in many settings where interpretations and interests are divergent across workers.<sup>3</sup>

### **Processes that Enable Hand-offs Represent Bureaucracy**

At an abstract level, the types of processes I just described—that could improve client hand-offs—represent increased bureaucracy. Bureaucracy involves formalization, or greater reliance on rules and procedures, often for the purpose of coordinating work across individuals and organizational units (Oldham and Hackman 1981, Argote 1982).<sup>4</sup> This formalization tends to produce greater standardization of work activities, and is also typically accompanied by increasing hierarchical control. The general view of such bureaucratic components has often been that they constrain individual action at work, limit task autonomy and variety, and therefore dissatisfy or even alienate workers (Rousseau 1978, Klein 1991, Heckscher 1994).

Recent thinking has called into question this relationship between bureaucracy and worker flexibility. Adler and Borys (1996) argued that bureaucracy's impact could diverge from this monolithic image and even be enabling if workers believed that it was helping them get

their work accomplished. For Adler and Borys, bureaucracy is enabling if it increases a worker's options for handling contingencies that arise in their work, and coercive if it narrows those options. In the temporal flexibility model, bureaucracy may simultaneously both enable and constrain: It enables by increasing a worker's temporal options through the improvement of hand-offs, and constrains by decreasing a worker's substantive task options for handling client-related work. As a result, the net impact on individual workers may depend on the worker's preferences between these traded-off factors, a point I return to in the discussion below.

### **Empirical Approach**

*PCPs as a Strategic Research Setting.* I studied the determinants of temporal flexibility among PCPs in varying organizational settings. PCP work is well suited for studying temporal flexibility because it is both highly unpredictable in terms of the timing of patient demands, and because it involves a high level of specificity between physicians and their clients, the patients. In comparison to other medical specialties such as emergency medicine, in which there is assumed to be little continuity in the doctor-patient relationship, primary care is built on the idea that the physician gains knowledge of the patient over the course of repeated interactions and observations (Graham et al. 2002). From the perspective of the PCP worker, however, this represents a problematic constraint that has generated widespread interest in ways of attaining greater temporal flexibility. This was reflected in my preliminary interviews with individuals from a range of demographic backgrounds and organizational settings, and has been shown in other recent studies of physician preferences and satisfaction (Linzer et al. 2000).<sup>5</sup>

The PCP context is also strategic because it presents an impressive range of organizational settings with more or less bureaucratic intensity (Kitchener et al. 2005). This provides a valuable source of variation for studying the impact of bureaucracy. In addition, organizations range in size from very small (solo practice) to relatively large (hundreds of physicians). My initial interviews suggested that PCPs in smaller organizations tended to have relatively little temporal flexibility across the board (also see Casalino et al. 2003, Briscoe 2006). Physicians in larger organizations, in contrast, varied in terms of the extent of perceived temporal flexibility. I focused on where and how physicians attain temporal flexibility among the set of larger organizations where resources and scale were sufficient to enact a range of organizational processes and bureaucratic structures.

One characteristic of the PCP setting should reduce barriers to hand-offs: the generic medical domain knowledge that provides a shared framework for transmission of more-situated knowledge about patients. PCPs

share domain knowledge stemming from the codified theory provided via medical education and reinforced by licensure. In practice, however, domain knowledge has been found to play a passive role in the routine clinical work of physicians, rarely entering into the conscious thought process of seasoned physicians (Patel et al. 1999, Cimino 1999). Instead, tacit clinical knowledge developed in the course of practice itself is combined with localized knowledge about each patient (derived from current and past interactions) to produce clinical decisions in the course of daily work (Epstein 1999, Goldman 1990). Variation in this clinical knowledge and practice complicate PCP hand-offs.

*Overview of Studies.* I report here on two studies conducted in this PCP context. Study 1 is an inductive field study during which the model of bureaucracy and temporal flexibility was developed. The data were collected over the course of 18 months, and include interviews, documents, and meeting observations involving PCPs and administrators in a range of medical practice organizations. Study 2 is a quantitative analysis of archival survey data that tests the two ends of the bureaucracy-flexibility model across a wider range of medical practice organizations and medical specialties. This unique survey data affords a rare opportunity to systematically evaluate the model in a population of larger medical practice organizations where size as a confounding factor can be fully controlled. The overarching research design is thus a multimethod hybrid approach recommended by Edmondson and McManus (2007) in situations where both new and established constructs are implicated. The specific methods I used in each study are summarized below prior to reporting corresponding findings. I shift from the terms “worker and client” to “PCP and patient” for the following empirical sections.

### Study 1: Field Study

Data for Study 1 come from interviews and archival sources in six relatively large medical practice organizations. An overview of the organizations and informants is provided in Table 2. In the findings below, I refer to these organizations as Fir, Pine, Oak, Elm, Ash, and Beech. Fir and Pine each counted approximately 250 to 500 physicians on staff, while Oak, Elm, Ash, and Beech each counted between 50 and 250 physicians on staff. Together, the six organizations varied in size and bureaucratic intensity, and represented approximately half of the 12 medical practice organizations with more than 50 physicians on staff that I identified in the region. Although the two larger organizations (Fir and Pine) appeared to be more formalized and bureaucratic overall, important differences existed across the entire group. For example, Fir and Elm made more extensive use of protocols than did the other organizations, including the relatively large Pine. Similarly, Fir and Oak both had

**Table 2** Descriptive Statistics for Study 1 and Study 2

	Study 1 Informants (2002 field study) Mean [Min–Max]	Study 2 Respondents (1987 archival data) Mean [Min–Max]
Workers (physicians only)		
Age	43 [32–73]	44 [28–82]
Female (%)	38%	17%
Tenure in practice organization (years)	14 [3–33]	8 [2–16]
Experience in other setting (%)*	44%	53%
Organizations		
Size (physicians)	185 [50–500]	75 [30–2400]
Ownership (% of orgs. that are physician owned)	50%	53%
N of workers	37	6,038
N of organizations	6	116

\*This refers to having any patient care experience in private practice settings (1–10 physicians), which tend to have much lower bureaucratic levels.

electronic medical records, but these were not used by the larger Pine or the smaller Elm, Ash, or Beech.

Fir was selected for greater in-depth study, including meeting observations and archival data collection, after a consensus emerged in initial interviews that it represented a setting with high levels of schedule and career flexibility. In addition, Fir had pioneered many of the organizational processes later adopted by others, making it ideal for studying the origins and functions of those processes.

*Data Collection and Informants.* For the physician interviews, I selected a minimum of three PCP informants from the clinical core of each organization. In each organization, a pool of potential interviewees was identified by administrators, out of which individuals were selected to ensure representative variation in gender, age, and organizational tenure. Only one individual declined to participate. Two-fifths (38%) of informants were female, and average age was 43 (age range 32 to 73). In addition to 25 practicing physicians, I also interviewed 12 organizational administrators. Many informants (15 of 37) also had experience with at least one other organization, allowing them to compare across settings with different organizational processes in place.

Interviews generally lasted for one hour and were conducted in person in the physician’s office. The interviews were guided by a semistructured protocol that sought to address individuals’ personal flexibility and career activities, as well as their understanding of organizational processes and work coordination mechanisms. Each session was recorded and transcribed. In the findings below, I indicate (where possible) the number of informants who reported a general behavior or attitude, and the organizational affiliation of quoted informants.

### *Analytic Procedure and Emergence of the Framework.*

I approached the interview data in an open fashion without imposing a framework on it. I coded passages from more than 500 pages of transcripts that fit one of three types: (1) statements directly attributing workers' temporal flexibility to an organizational process or set of processes, (2) statements about how organizational processes functioned, whether for intended or unintended purposes, and (3) general statements about the schedules and temporal flexibility of workers. From examining these passages, a provisional framework emerged that related common organizational processes to perceived temporal impacts on physicians. This framework evolved through iteration between existing literature search, framework development, and transcript analysis (Glaser and Strauss 1967). In particular, aspects of the framework were compared with coded sequences that provided confirmatory or contradictory evidence, and incremental revisions were made accordingly.

This process placed the hand-off event at the center of the framework. Perceived conflicts or risks around hand-offs emerged as key barriers to achieving temporal flexibility—and key leverage points on which organizational processes acted in improving temporal flexibility. Where possible, I also noted ways in which informants believed that these processes had an impact on organizational efficiency and clinical quality; often those impacts were reported to be the original reason for developing the process in question.

The emergent framework is based on inductive identification of mechanisms linking organizational processes to individual outcomes. These processes were distributed unevenly across the six organizations, rather than all being clustered systematically in a certain subset of organizations. There was also variation in some practices within organizations, for instance when clinical teams or office locations differed. Hence, my empirical approach was to consider each informant's account as a discrete data element, providing evidence on the mechanisms linking organizational processes and individual temporal flexibility. I brought in archival material and meeting observations where appropriate to corroborate or flesh out features of the organizational process referenced by the informants.

### **Illustrating the Model Using Study 1 Findings**

*PCP Work and Temporal Flexibility.* PCPs come from an historical tradition of strong individual responsibility for patients, generating a tight coupling between physician and patient. This tight coupling leads physician schedules and careers to be organized around the needs of patients, with consequences including long hours and an unending feeling of temporal uncertainty stemming from never knowing when patient demands might arise that require prompt attention. One informant described

this state of affairs as constant vulnerability, referring to the way in which patients could gain access to him. Another physician said that, in the extreme, the constant stream of demanding patients felt like a relentless monster from which he could never escape.

When a physician's schedule has to be organized around the needs of patients, efforts at controlling time become unreliable, and efforts at part-time patient care practice are severely impeded. For example, I heard several variations of the following story: An informant tried to modify her schedule to see patients only three days per week, but this attempt ended in frustration after just six weeks. Stories were common of family vacations cancelled because some patient problem arose that had to be handled directly, or when cross-coverage by other physicians could not be arranged. Another informant said this of PCP work: "You're always committed to the patients. But the unfortunate result [is] you never stop seeing patients; you can't stop to teach, write, or even think" [Pine]. Hence, a lack of short-term schedule flexibility also spills over to limit the longer-term options for adjusting the mix of professional work activities.

*Hand-offs Facilitate Flexibility.* A consensus emerged among informants that hand-offs were the key to temporal flexibility. The ability for one physician to hand off his patients to another physician, in a safe and effective manner, was viewed as a prerequisite for achieving temporal flexibility. Hand-offs permit physicians to preserve windows of time away from patient demands, and even to create new windows of protected time as other needs arise. At the same time, though, safe and effective hand-offs were also seen as exceedingly difficult to achieve, and in fact some informants said they were unattainable. The potential for conflicts arising around hand-off events was identified as a barrier impeding the expansion of hand-offs, and hence the attainment of temporal flexibility. The perceived risk of conflict was sometimes based on informants' past experiences, and other times based on hypothetical beliefs about what would happen if he tried.

Although physicians in all settings faced the unavoidable fact that patient demands were temporally unpredictable, some informants believed they practiced in organizational contexts where hand-offs were relatively more feasible. In fact, some informants had chosen to work in a particular organization because of a perception that hand-offs were enabled there: "I came here because I was interested in being able to share my patients with other clinicians. . . . I knew that was going to help me be able to do the other things I was interested in, beyond seeing patients" [Elm]. Others expressed similar views.

Three types of organizational processes enable hand-offs in professional service work, exemplified in the accounts of these physicians. These processes helped to (a) shape patient participation and expectations,

(b) standardize physician work practices, and (c) codify knowledge about patients. In doing so, these processes addressed potential conflicts that could arise around the hand-off event. Below, I provide descriptions and illustrations of these processes, including the potential conflicts around hand-offs that they help address. This is followed by a discussion of practical trade-offs accompanying these processes that sometimes generated ambivalence among informants.

(a) *Shaping Patient Participation and Expectations.* Informants highlighted the role of patient expectations and patient participation in hand-offs. A central concern was the potential for conflicts to arise from patients who were angered or confused by the hand-off itself or by the different treatments or styles of the PCPs they were meant to interact with as a result of the hand-off. The short-term costs of such conflict for physicians included lost time and energy, and the long-term risks included reduced patient compliance, escalation, and legal action. In four of six organizations, there was an explicit organizational goal of communicating with patients about the possibility and implications of a hand-off occurring. For example, at Fir a brochure given to new patients, and available on the organization's website, showed a message from the medical director explaining that although the patient would choose a PCP, their care would be handled by a team of care providers. Fir and Pine also marketed an identity in the community that transcended any of their individual physicians. Informants believed this image helped orient patients toward the organization rather than just toward their individual physician.

To many informants (11 of 25), consistency in work practices helped reduce patient conflicts around hand-offs. Some clinical teams shared a common format or style for patient encounters, which could help to avoid situations where patients were expecting one set of experiences but encountered another. Two informants cited examples of contrasting styles that could lead to this problem. One compared a more confident and paternalistic style of patient interaction with a more open and collegial style [Ash]. The other informant compared one patient-encounter style involving small talk and constant eye contact with another focused only on medical issues with the physician concurrently taking notes on a computer [Oak]. Common formats and styles could function to reassure patients in the same way that more-idiosyncratic interaction rituals functioned in settings based on interpersonal trust reassure patients.

(b) *Standardizing Physician Work Practices.* Hand-offs were also facilitated by the standardization of the substantive work if that standardization reduced the scope for conflicts among physicians and between physician and patient. One such standardizing force, the use of clinical protocols, was common to all six organizations in the study. Protocols specify a sequence of activities, such as tests or procedures, to be followed after a given

set of common symptoms are presented by a patient (Lohr 1995). For example, one protocol for back pain lists less-invasive options to be followed prior to orthopedic surgery. Another outlines medications and treatment periods for patients diagnosed with attention deficit and hyperactivity disorder, and a third provides guidelines for managing Type II diabetes.

Clinical protocols provided greater predictability in terms of how one physician's patient would be treated by another physician. Most informants (16 of 25) believed that using protocols could, by partly standardizing practices, decrease the scope for conflicts. Such conflicts might arise around issues such as whether a magnetic resonance imaging (MRI) exam should have been ordered on the patient [Ash] or whether it was appropriate to insist on giving a generic substitute drug to a patient [Fir]. Even raising such issues with other physicians was viewed as a difficult exercise by most informants, in part owing to a professional norm against criticism of colleagues. A great deal of anxiety and uncertainty surrounded the idea of such physician-to-physician conflict.

None of the organizations used protocols as binding rules governing physician behavior, however. Instead, they were resources used by physicians in making decisions about her own patient encounters, and also (more subtly) to judge the work of another physician who had treated her patients. In this sense, protocols offered both standardization and flexibility. They shaped routine behaviors in ways that reduced worker-to-worker conflict around hand-offs, often by helping to provide a common framework and terms for evaluation as much as by partially directly scripting the work activity. That common framework also helped physicians encode and transmit knowledge about particular patients—and perhaps also knowledge about clinical knowledge more broadly. Even if that physician disagreed while reading about the treatment her colleague provided, she would likely fathom the rationale behind that treatment decision in the context of the protocol framework, for example finding some explanation for why an allergy test was not conducted even though the patient technically met all the criteria that recommended ordering that test.

Informants also believed that the very presence of the protocols required physicians to orient themselves toward an evidence-based approach to medical practice that the protocols represented. The effects of this shift could be profound, given that physicians make many decisions using forward thinking—drawing inferences from a pattern of facts without ever formally applying the evidence-based logic of scientific diagnosis that they were taught in medical school (Patel et al. 1999).

All six organizations also collected data on aspects of patient care work such as frequency of a physician's patient hospital admissions and lengths of those patient hospital stays, physician scores on patient satisfaction



surveys, and physician utilization rates for tests and procedures, such as MRIs. These data from individual physicians were monitored and reviewed to varying degrees. Typically, wide discrepancies were investigated with the potential for further inquiry or intervention. These types of formal processes directly increased work standardization by decreasing variance in physician practice behavior. Informants believed this had an impact on hand-offs by decreasing the chances of disagreement between involved physicians.

Exceptions from even the most routinized protocols and restrictions could be made by physicians in all the organizations I studied. However, an excessive number of exceptions would typically trigger a review by an internal administrator. At Fir, and to a lesser extent in the other organizations, this exception review process had become a relatively sophisticated metaroutine itself, with procedures followed by designated physicians or administrators, and formal dispute resolution options that could be triggered as the review progressed. Though the exceptions provide the potential for conflict between physicians, the dispute resolution system could also be used to handle that type of conflict. Related to this, at Fir I observed quarterly physician staff meetings where anonymously coded measures of work practices were displayed. This collegial review process was meant to encourage voluntary standardization; administrators in two other organizations reported similar practices.

(c) *Codifying Knowledge About Patients.* All six organizations used different medical recordkeeping systems to manage patient information. There was debate surrounding the adequacy of these systems, and they were regarded as sources of potential conflict or risk during hand-off events. For example, what if a record included information on the diagnosis given to a patient and the symptoms consistent with that diagnosis, but omitted details that detracted from that diagnosis (often called loose ends) [Oak]? Such missing details might be important to reinterpret in the presence of new symptoms or other subsequent developments in the patient, creating problems around a hand-off episode. In turn, diverging diagnoses or treatment plans could result, producing conflict between physicians, as well as medical risks for the patient.

More-systematized organizational recordkeeping took the form of either electronic medical records (EMRs) or paper templates that were then integrated into many aspects of physicians' work. These systems addressed several concerns that otherwise limited physicians' willingness and ability to hand off patients. The EMR, in particular, was admired by some informants because they thought it improved record accuracy and put all records in one place. Whether electronic or paper, however, the chart syntax was partially standardized and certain chart fields were mandatory in order for a chart to be considered complete. This made it easier to cover

another physician's patients. As one put it, "We take care of [these patients] as a team. . . . Because of the record system, we always have what we need, no matter whose patient we're seeing" [Fir]. Although only one informant mentioned actually witnessing medical errors, many believed that the recordkeeping system minimized that risk. Key patient data were available and accurate, creating what one informant referred to as a safe network for the care of patients, notwithstanding the use of hand-offs [Fir].

The recordkeeping system also facilitated and legitimated greater scrutiny of one physician's records by others in the organization. Several informants believed this had the effect of inducing physicians to more fully explicate their reasoning for diagnosis and treatment decisions in a way that was beneficial for hand-offs. Though physicians were still wary of judging each other's medical decisions, three informants said this shift encouraged them to personally think through and write out more careful explanations of the reasoning behind their decisions. One informant explained that, as a result, she had come to understand her colleagues' medical practice perspectives more intimately, which in turn helped her to work with those colleagues' patients during hand-offs [Fir]. Hence, not only was more volume of information getting transferred between physicians, but also physicians were exposed to each other's tacit clinical knowledge and practice patterns. Physicians sharing patients may, as a result, come to better understand each other's latent frameworks, heuristics, and assumptions related to professional practice.

The timing of record updating was also improved in a way that facilitated hand-offs. Whereas, under individualized recordkeeping, informants suggested some physicians did not always update charts immediately, this was much less common under the more-sophisticated systems. The fact that others could and might need to use those records soon encouraged timely updating, a point made by several informants.

### **Trade-offs Associated with Bureaucracy**

Study 1 unearthed several trade-offs for physicians that were associated with gaining hand-off-based flexibility. First, the very standardization and routinization of work activities that enabled client hand-offs also reduced task variety and discretion. This is important, because reduced task variety and discretion have often been found to decrease job satisfaction (Oldham and Hackman 1981, Spector 1997). The concern that reduced satisfaction or boredom might lead physicians to seek disengagement from professional practice was supported by the comments of one physician informant who claimed to have taken a managerial position partly to escape the monotony of clinical practice [Fir]. Another physician also seemed to view his work negatively, using the term conveyor-belt mentality to describe his work

context [Beech]. It is possible that this individual uses the available flexibility to partially withdraw from what he views as an increasingly dissatisfying work context.

In more-bureaucratic organizations, physicians also had to submit to some degree of supervision, including supervision by nonphysicians. This trend has long been thought to dissatisfy professional workers (Scott 1965). In addition, incomes tend to be higher in private practices, where hand-off-enabling bureaucracy tends to be less developed, implying a monetary trade-off accompanying access to temporal flexibility. The economic incentive to work extra hours is also not as strong in organizations where physicians are salaried as opposed to where they are private practice owners, though the effect of this difference may be muted by the productivity bonus schemes used by all of the organizations I studied. Finally, the design of any one organizational process, such as the EMR, was often widely debated among physicians.

These trade-offs associated with working in more-bureaucratic organizations are unlikely to be perceived in a uniform way by professional workers. Rather, some workers may especially value the temporal flexibility and other aspects of work in bureaucratic organizations; others may particularly dislike the loss of control or income. In fact, five informants directly linked the two sides of this trade-off: (negative) loss of autonomy and income and (positive) freedom stemming from temporal flexibility.

### **Worker Selection and the Development of Community**

Because organizational processes that enhance flexibility will be more attractive to some workers than to others, they are likely to influence the self-selection of individuals choosing to work within them. Informants who commented on the personal orientation needed to thrive in bureaucratic settings referenced the need for a team approach and an acceptance of the organization's way of doing things. For example, one informant said, "We need people who buy in to the system. When I asked Sarah to cover for me this morning, she said 'bring it on,' and she knows I'll return the favor. If instead we'd gotten into an argument, that wouldn't work." When asked how this affected the hiring process, that same informant said that she had learned to screen out physicians who lacked a team orientation.

Consistent with this, interviews with recruiting administrators in three of the organizations suggested an emerging recognition of the importance of community-oriented values among organizational members. Values that were frequently mentioned include teamwork or collegiality, and an orientation toward learning and evidence-based medicine. These stood in contrast to professional individualism (the lone wolf syndrome, as one administrator put it [Beech]) and an orientation to seeing medicine

more as a craft tradition. These value orientations may be common across professional workers where occupational socialization encourages individual autonomy (Leicht and Fennell 1997). Among physicians, however, some evidence suggests that younger workers value flexibility and orient more favorably toward bureaucracy and a standardized approach to medicine (Moody 2002).

### **Study 2: Survey Evidence**

Study 1 provided insight into the mechanisms linking formalization and flexibility, but it did not allow me to rule out other factors influencing temporal flexibility. In particular, it remained unclear to what extent organizational size could be driving flexibility through mechanisms other than the bureaucratic processes identified above. In Study 2, therefore, I addressed this issue directly while seeking to verify the bureaucracy-flexibility relationship across a greater number of organizations. I gained access to linked survey data on physicians and their organizations that to my knowledge represents a unique opportunity for examining bureaucracy and temporal flexibility among physicians. Using these data, I evaluated the distinct impact of bureaucratic formalization, controlling for size, on three measures related to personal temporal flexibility.

There are several reasons to control for size in this analysis. Larger professional organizations may enjoy economies of scale related to leveraging of human capital (Sherer 1995), and therefore have greater resource slack to share with employees in the form of flexibility. Though researchers in the past found few economies of scale in medical practice (Newhouse 1973), this is potentially a factor of importance. Another reason that larger organizations might offer more flexibility is that they have more workers to share on-call schedules, reducing the frequency with which any given physician has to endure evening and weekend work. Larger organizations are also more likely to pay professionals as salaried employees rather than as partial practice owners, providing individuals with less of an inducement to work long and inflexible hours when compared with the incentives of ownership (Casalino 1992).

The data come from 6,038 physicians located in 116 medical practice organizations, collected as part of the 1987 survey of large medical practice organizations (Konrad et al. 1989). I obtained these data from the original investigator. Although changes took place in the health services sector (and virtually all other industries) over that time period, medical practice organizations in 1987 displayed significant variation in terms of bureaucratic processes; the same was true in 2002 (Robinson 1999, Casalino et al. 2003).

The organizational survey population was defined as *all* medical practice organizations in the United States identifiable during the year of the survey (1987) with

a staff of at least 30 physicians. The response rate at the organizational level was 60%. Organization-level surveys were obtained from both practice administrators and medical directors, and included variables relating to bureaucracy, size, and many other organizational features. These organization-level data were matched to individual-level surveys sent to all regular physician staff. (In the four largest organizations a random sampling was used; weights added accordingly.) The majority of respondents were PCPs such as those in Study 1; however, about 13% of respondents were specialists in some medical subfield, such as surgery. The individual level response rate averaged more than 80% across organizations. In the analyses below, organization-level averages of individual survey responses are used to capture individual experiences and responses to bureaucracy. Table 2 provides descriptive statistics and compares the sample to that used in Study 1. Table 3 provides means, standard deviations, and correlations for all variables.

### Dependent Variables

Three dependent variables relating to personal flexibility and associated worker attitudes were captured using variables from the individual physician survey: respondent's weekly patient-related work hours, the importance of predictable work hours in the respondent's decision to work in that organization, and the respondent's perceptions of the adequacy of organizational attention to physician work satisfaction. For each variable, I used organizational averages computed from the individual responses of physicians in those organizations.

*WeeklyPatHrs.* Weekly patient-related work hours are relevant because of the high average number of hours worked by most physicians. In surveys, physicians routinely report an average of 60 hours per work week (Gonzales and Zhang 1998); logically, sustaining that level of hours precludes most personal flexibility since there is little waking time left in the week for other activities. Therefore, lower weekly patient-related hours indicate that the organization is enabling workers to do something other than see patients with some of those hours. Respondents were asked, "About how many hours per week do you spend in each of the following activities? (Please total the hours per week you spend on all

these activities.)" *WeeklyPatHrs* represents the sum of open-ended responses for the following categories: seeing patients in office, in emergency room, in operating or delivery room, in hospital making rounds or other hospital activities, and talking with patients or consulting over the phone. The following categories were excluded from *WeeklyPatHrs*: administrative and other professional duties not involving patient care, and other professional activities. Across organizations, *WeeklyPatHrs* varied from 40.74 to 58.33 (and total work hours from 44.8 to 64.4).

*ChoseForHours.* The importance of predictable work hours in the decision to work in that organization represents a measure of the extent to which workers appeared to be choosing work settings because they thought they could obtain greater control of work hours there. Predictable hours are a necessary condition for personal flexibility, needed to generate windows of time protected from patients. Respondents were asked, "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? I wanted predictable working hours." Answers were solicited on a scale ranging from "Not at all important" (0) to "Very important" (4). Organizational averages for *ChoseForHours* varied from 1.00 to 2.73. Immediately following the questions about why the informant chose that work setting, informants were asked about the accuracy of those expectations; more than 80% reported finding their expectations to be accurate.

*AttnPhysSat.* The issue of whether the organization's bureaucratic structures and processes are perceived by workers to be enabling was captured with a question about the adequacy of organizational attention to physician work satisfaction. Prior research suggests that schedule control, which is closely related to personal flexibility, is one of the central influences on general physician work satisfaction (Linzer et al. 2000). The advantage of the question used here is that it asks the respondent not just how he feels about work in general, but specifically how he thinks the organization's activities influence his work satisfaction. Respondents were asked, "Listed below are some issues that are common

**Table 3 Means, Standard Deviations, and Correlations**

	Mean	S.D.	1.	2.	3.	4.	5.	6.
1. <i>LnSize</i>	4.32	0.72						
2. <i>Ownership</i>	1.47	0.92	0.30**					
3. <i>FoundingYr</i>	1,945	24.04	-0.13	0.31***				
4. <i>Bureaucracy</i>	0.41	0.20	0.38***	0.29**	0.17+			
5. <i>WeeklyPatHrs</i>	49.62	3.68	-0.26**	-0.35***	-0.36***	-0.44***		
6. <i>ChoseForHours</i>	1.91	0.44	0.30**	0.55***	0.47***	0.42***	-0.61***	
7. <i>AttnPhysSat</i>	1.12	0.42	0.27**	0.50***	0.32***	0.36***	-0.41***	0.55***

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

to large medical practices like yours. Please check the space on the line beside each item that best describes how you feel about the amount of attention your practice organization as a whole gives to each of the following issues. ...Attention to ensuring a high level of physician work satisfaction.” Answers were solicited on a scale ranging from “Too little” (1) to “About right” (4) to “Too much” (7). Virtually all (98%) informants answered between 1 and 4, inclusive. Organizational averages for *AttnPhysSat* ranged from 0.32 to 2.13.

### Independent Variable

**Bureaucracy.** The formalization scale was developed as part of the same study of organizational structure in large medical practices (see Konrad et al. 1989). The scale was composed of 12 questions, listed in the appendix, which were all coded (1) if yes, (0) otherwise. These questions were objective in nature and answered by the organization’s medical director in a separate telephone survey. The composite variable was scaled for ease of interpretation, so that the most bureaucratic setting (involving all 12 practices) registered 1.000. Actual scores ranged from 0.083 to 1.000. First, one of the primary organizations from Study 1, was identified in the 1987 sample. It registered 1.000 on the formalization scale at that time. If the formalization were to be applied to all six organizations from Study 1 based on the 2002 field study data, I estimated that their scores would range from 7 to 12 on the scale.

### Control Variables

**LnSize.** I used the natural log of size as a control variable (results did not differ significantly using the linear form). Logged size ranged from 3.2 to 7.8 (corresponding to 40 to 2,400 physicians). In addition, these data also permit me to directly control for organizational ownership.

**Ownership.** Ownership is an important control because of the incentive and selection effects that worker ownership brings that could dampen worker interest in personal flexibility. The ownership variable was coded 1 if the organization was owned by practicing physician members, and 2 if it was owned by an external entity (public or private).

**FoundingYr.** I controlled for the possibility that norms in older organizations may be less accommodating of physician work satisfaction by entered organizational founding era (ranging from 1860 to 1984).

### Findings from Study 2

The bureaucracy index was significantly related to all three dependent variables, as indicated in Table 4. Greater bureaucracy was associated with lower weekly work hours, more workers choosing the organization for

**Table 4 OLS Analysis of Bureaucracy on Indicators of Temporal Flexibility and Associated Worker Attitudes**

	WeeklyPatHrs		ChoseForHours		AttnPhysSat	
	1	2	3	4	5	6
Intercept	157.73*** (26.57)	140.92*** (25.80)	−7.62* (2.92)	−6.50* (2.94)	−12.7*** (2.68)	−11.4*** (2.66)
LnSize	−1.26** (0.45)	−0.40 (0.45)	0.11* (0.05)	0.07 (0.05)	0.14** (0.05)	0.10* (0.05)
Ownership	−0.70 (0.37)	−0.55 (0.35)	0.17*** (0.04)	0.16*** (0.04)	0.17*** (0.04)	0.16*** (0.04)
FoundingYr	−0.05*** (0.01)	−0.04** (0.01)	0.004** (0.001)	0.004* (0.001)	0.007*** (0.001)	0.006*** (0.001)
Bureaucracy		−5.46*** (1.57)		0.36* (0.18)		0.42** (0.16)
Adjusted R <sup>2</sup>	0.25	0.32	0.30	0.32	0.44	0.47
ΔR <sup>2</sup>		0.07		0.02		0.03
F for ΔR <sup>2</sup>		12.15***		4.15*		6.65**
N	116	116	116	116	116	116

Notes. Dependent variables are organization-level averages of individual survey responses. Standard errors in parentheses.

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

predictable work hours, and greater perceived attention to physician work satisfaction (significant at the 0.001 level, 0.01 level, and 0.05 level, respectively). The magnitudes of these effects were also substantial. Compared with the least bureaucratic organizations, those that were most bureaucratic were associated with six fewer weekly work hours, a one standard deviation (0.42) increase in workers’ choosing the organization for predictable working hours, and nearly a one standard deviation (0.36) increase in perceived attention to physician work satisfaction. In addition, when bureaucracy was added to a baseline regression with the other covariates, it explained significantly more variance in each of the three dependent variables, indicated by the significant change in  $F$  statistics in Models 2, 4, and 6. Finally, in each case the addition of bureaucracy weakened the magnitude of the size variable, and in two of three cases weakened the significance of the size variable, suggesting that bureaucracy partially mediates the relationship between organizational size and personal flexibility.

### Discussion

The purpose of this research was to understand how bureaucratic organizational processes affect worker temporal flexibility. Two broad findings emerged. First, overall bureaucratic organizations can enhance temporal flexibility by acting as a shield against the demands of work—in this case, demands driven by clients in PSW settings. This represents an inversion of the traditional relationship between bureaucracy and flexibility that is found in much of the contemporary debate on organizational sources of worker flexibility. Second, the key to understanding this inversion lies with worker-to-client specificity and hand-offs. In the PSW context, specificity generates the problem of inadequate temporal flexibility,

and client hand-offs provide the solution. In order for workers to achieve the flexibility necessary to vary their schedules on short or long time frames, they require the ability to hand off clients so that windows of time can be fully protected.

The resulting model of bureaucracy and temporal flexibility shows how organizational processes can enable hand-offs by addressing three key limiting characteristics of professional service work that otherwise generate specificity: client participation in production, worker practice variation, and knowledge of the client from past interactions. First, to gain client participation in the presence of hand-offs, organizational routines for client encounters can partially replace individual interaction rituals as the source of trust and a symbol of quality. Client expectations about hand-offs are also managed through organizational communication efforts. Second, worker practice variations that could otherwise hinder hand-offs by causing conflict among workers are minimized through the standardizing effects of rules and routines, decision protocols, metaroutines, and other partial constraints. Both decision protocols and metaroutines play an interesting role in this respect by standardizing to reduce hand-off conflicts, while at the same time allowing customization necessary to handle complex work inputs. Third, the transfer of knowledge about clients from past interactions is addressed with knowledge-management tools that increase the amount, accuracy, and explicitness of knowledge available to hand-off recipients. These systems also minimize conflicts over work practices by providing a framework that helps workers understand the rationale behind each other's decisions.

These organizational processes represent a more-bureaucratic workplace. To some workers, this translates into an overarching sense of loss—yet to others, these workplaces clearly represent advantageous and appreciated contexts in which to conduct their PSW. It is important to recall that the organizational processes I observed to generate flexibility for physicians were not actually designed for that purpose. Rather, they were developed in order to improve the quality and efficiency in patient care. In addition to informant attributions to this effect, I also found that annual reports from Fir consistently portrayed this patient-care focused rationale. In fact, nowhere could I find public materials mentioning the goal of accommodating physician temporal flexibility.

To further identify whether the enhanced flexibility for physicians was emanating from the bureaucratic processes themselves or from other factors related to the size of the organization, I also examined data on a set of relatively large organizations that varied in both size and bureaucratic intensity. I found bureaucracy to have a strong impact beyond the role of size. That said, one question that remains is whether bureaucracy might enhance flexibility even in smaller settings. Few

small health-care organizations incorporate the kinds of bureaucratic processes I studied, making this a difficult question to answer at present. On the one hand, it may be that large scale is essential to amortize investments in bureaucratic processes and to provide a sufficient pool of substitute workers for hand-offs. On the other hand, as those processes mature and improve they may become available at lower cost, and a pool of substitute workers could conceivably be achieved through networks of smaller organizations.

### **Generalizing the Model and Future Research Directions**

The model of bureaucracy and flexibility emerging from this research can be generalized to other occupational settings where clients create unpredictable timing for workers, and worker-to-client specificity hampers client hand-offs. Workers in a wide range of PSW contexts suffer from these characteristics to varying degrees. These workers include many medical specialists, corporate lawyers, laboratory scientists, financial advisors, investment bankers, university professors, accountants, architects, management consultants, and advertising and design professionals. The exact nature of work varies across and within these occupations; for example, specificity will tend to be greater in occupational settings where repeated interactions between worker and client are important, and where work practices are more complex and idiosyncratic. Yet to the extent that the above conditions are met, temporal flexibility problems should exist and the model could be applied. One implication is that the observed trend toward larger and more-bureaucratic professional service firms, characterized by greater management intensity and more-sophisticated organizational processes (Brock et al. 1999), may not be seen only negatively by workers because of increasing bureaucratic constraint, but also positively because of greater access to temporal flexibility. This may even help these organizations attract and retain desirable workers.

The model may also generalize further. Beyond these client-based occupations, the logic of specificity limiting hand-offs can be extended to two other categories of professional work: project-based work and internal-service settings. In project settings, such as are common in technology organizations, a worker seeking flexibility has to orient toward the project team much as the physician does toward her patient. The worker has to be responsive to demands that arise from others on the team at unpredictable times, and she cannot hand off those demands to someone else because of her unique role in the team. Internal-service workers, such as computer network administrators, endure similar constraints in the sense that they must be responsive to unpredictably timed demands and cannot easily hand off those demands to another person. Here, too, greater bureaucracy may provide increased flexibility.

In this vein, one factor that is likely to influence the model when comparing across occupations is the extent to which occupational domain knowledge is well codified. For example, medicine, law, and other traditional professions should enjoy some benefit from the high level of codification and dissemination of domain knowledge across the occupation. Recently created occupations, and those where domain knowledge remains contested or unsettled, represent areas with a lower likelihood of exhibiting a basic abstract framework and language for communicating across workers. Similarly, occupations where workers are themselves engaged in creating novel knowledge would have an exceedingly difficult time handing off work among one another, yet the exact role of domain knowledge in hand-offs deserves further scrutiny.

Interestingly, bureaucratic processes with functionally comparable effects appear to be spreading across many of these professional occupations in the form of knowledge management and project management tools (Davenport and Prusak 1998). In management consulting and law, organizations attempting to codify client knowledge may in fact be enabling hand-offs, and hence the potential for more worker temporal flexibility. In engineering and scientific organizations, the codification of project knowledge is similarly being pursued in order to promote learning from one project to another (Adler 2006, Argote and Ingram 2000). Further research is needed to study the impact these practices are having on personal temporal flexibility.

Impacts on the clients receiving services from organizations that are more bureaucratic also need additional study. For example, although some of the organizational processes outlined here mitigated problems for physicians that could arise from patients mistrusting hand-offs, this does not necessarily mean that the patient's objective interests were in fact being well served. However, to the extent that there was information available on the objective quality of patient care, it did not suggest lower quality in the more-bureaucratic organizations I studied. The two most-bureaucratic organizations in Study 1 (Fir and Pine) had received many independent quality awards and had received high quality ratings from *Newsweek* and *U.S. News & World Report*.

A related issue concerns whether specific workers who engage in more hand-offs offer lower-quality service. For example, do physicians engaging in the most hand-offs provide worse care to their patients? Although this was beyond the scope of my study, I did find some relevant evidence. An unpublished internal study in Fir concluded that part-time physicians, who had made the most use of career flexibility and were therefore likely to have subjected patients to the most hand-offs, actually provided care equal to or better than comparable full-time physicians. Part-time physicians, on average, spent longer with each patient, were not negatively

associated with measured health outcomes, and received higher patient satisfaction scores. Still, more needs to be learned about this crucial set of impacts. For example, how do role enactments vis-à-vis other practitioners and clients influence the quality of hand-off coordination practices and service outcomes (Bechky 2006)?

One practical drawback in this research concerns the time gap between Study 1 (2002) and Study 2 (1987). Differing organizational practices in the earlier era might mute or distort the inferences drawn for the current era in which the model was developed. This concern may be mitigated by the remarkably slow pace of change in terms of the average medical practice organization from one era to the next, and continuing wide practice variation across organizations (Robinson 1999, Casalino et al. 2003). The one organizational process that has evolved most dramatically over that time period is the EMR, yet even that remains relatively scarce among contemporary large medical practice organizations.<sup>6</sup>

### Implications for the Study of Temporal Flexibility

This research uses a structural lens to approach the detailed study of temporal flexibility, focusing on the basic objective characteristics that define certain types of work. Zerubavel (1979) recognized the value of the structural approach, arguing that a key condition on the experience of work time is the degree of social accessibility involved in the work. Greater social accessibility implies more of a need to be available for others. I apply this approach to client-driven PSW contexts, showing the central role of worker-to-client specificity in this work. Although specificity is a problematic constraint, some types of bureaucratic intensification can lessen its impact on individual worker flexibility by enabling client hand-offs.

This structural approach may also contribute new insights when integrated with a more cultural or normative approach (for another example, see Lee et al. 2000). One point of linkage here between the two approaches is the way in which organizational processes can serve as vehicles for the self-selection of workers with compatible norms into organizations. In this case, bureaucracy is serving a dual role by both structurally enabling flexibility and generating cultural support for flexibility by attracting workers who share compatible norms. Consistent with this, Study 2 found bureaucracy to be associated with greater schedule-control preferences among individuals.

Rather than acting as a substitute for organizational culture, the structural supports for temporal flexibility may require as much or more cultural cohesion in order to function in this capacity. It is difficult to directly induce relatively autonomous professional workers into full bureaucratic participation, and there is wide scope for resistance (Kellogg 2005). Instead, cultural alignment could lead workers to embrace the standardized work

practices, interaction routines, and elaborated knowledge systems because they view them as tools in the advancement of their own interests. This, in turn, requires professional workers to trust in those organizational processes, a characteristic that appears to be central to the overall success of knowledge-based organizations (Adler 2002, Tsai and Goshal 1998). Similarly, gaining worker participation and trust in more-standardized work practices and hand-offs may be eased through cultural alignment of clients with the work practices of an organization.

### **Implications for the Study of Formal Organizational Processes**

This research also has implications for the study of organizational processes. In particular, it suggests a contingency-based modification to theories of bureaucracy's impact on workers. Bureaucracy's tendency to standardize work practices is well known, and the ways in which it enhances worker-to-worker coordination continue to be refined and explored (Argote 1982, Gittel 2003, Edmondson et al. 2003). However, as described above, when the impact of bureaucracy on workers is examined, it is often interpreted in a negative way because it tends to reduce worker task discretion.

It may be more useful to view bureaucracy's impact on workers' own flexibility via two distinct routes. First, rules and procedures can directly shape task or temporal flexibility by directly mandating how, when, and by whom work will get done. Many workers are averse to this effect of bureaucracy because it takes away discretion. Second, however, rules and procedures can help standardize work activities and tools to make hand-offs more feasible, thereby increasing the worker's options for control and flexibility with respect to her work. This enabling of worker substitution can also be viewed negatively, as argued by Mayo (1945) and other critics of scientific management who saw it as dehumanizing and socially alienating workers, yet it is the presence of this second route that has the potential for temporal liberation. The positive linkage between greater bureaucracy and greater temporal flexibility is contingent on there being some level of specificity that limits hand-offs, so that bureaucracy can in turn function to enable those hand-offs. Such specificity is frequently found in PSW settings, and may also be found to a lesser extent in other types of manufacturing or services.

### **Conclusion**

Increasing numbers of professional workers seek temporal flexibility, but not enough is known about how organizations can provide such flexibility. Some scholars have conceived of flexibility as an employee benefit, provided alongside other terms and conditions in the employment contract. Others have shown the ways in which existing organizational or occupational norms

hamper the provision and uptake of flexibility policies even when they are offered by employers. An alternative and complementary approach is pursued here, grounded first in a structural approach to the nature of work. This structural approach asks how core characteristics of work objectively shape temporal dimensions of workers' lives, and uses that as the platform from which to examine the impact of organizational processes.

Out of this approach has emerged the outline of a model for how bureaucratic processes shape temporal flexibility across a range of client-based professional service settings. Future work should focus on the crucial hand-off construct that lies at the heart of this model. Both intentionally and unintentionally, organizational processes profoundly influence a worker's hand-off capabilities and the ensuing consequences. These influences need to be better understood, and linked to other features of the worker's experience and the organization's performance.

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### **Appendix. Bureaucracy Scale Items**

- Do you develop or distribute algorithms [similar to patient care protocols]?
- Do you have a policy to monitor use of hospital services [ordered by physicians]?
- Is there a procedure for providing feedback [to physicians] on costs?
- Is there a procedure to deal with poor quality of care?
- Is this procedure [to deal with poor quality of care] written down?
- Is there a well-established productivity standard?
- Are the standards [addressing productivity] written down?
- Is there a formal review of new physicians after a trial period?
- Is productivity periodically reviewed on an individual basis?
- Is there a procedure to deal with low physician productivity?
- Is there a procedure for dealing with impaired physicians?
- Is this procedure [dealing with impaired physicians] written down?

### **Endnotes**

<sup>1</sup>Following the approach of Broschack (2004), I used the 2004 U.S. Service Annual Survey to estimate the size of the professional services sector. Professional/scientific/technical services and ambulatory/hospital health-care services sum to 19.3% of total U.S. GDP. Adding other health services (e.g., nursing

care facilities) and securities and brokerage services brings the sum to 23.7% of total U.S. GDP.

<sup>2</sup>These three PSW features also interact to compound hand-off problems. For example, the practice variance that is common in worker activities worsens the sharing of knowledge about clients since it leads practitioners to focus on different types of information that each thinks will be useful for future work.

<sup>3</sup>In addition, the decision protocols described above that tend to standardize professional service work provide heuristics that help workers make sense of clients and their needs—essentially providing a common frame within which client knowledge can be generated and transmitted across hand-off recipients.

<sup>4</sup>Bureaucratization is impeded by another inescapable characteristic of professional service work, namely *substantive input uncertainty*, defined as a lack of information about the needs that clients present (Argote 1982). At any given level of input uncertainty, however, organizations find ways of progressively bureaucratizing professional work, a trend that sociologists of the professions have long observed.

<sup>5</sup>Interest in temporal flexibility was widespread among informants, including nearly all those from the six Study 1 organizations (24 of 26) and more than half of those informants from smaller practice organizations who were ultimately excluded from the final Study 1 findings (10 of 17). The reasons for wanting flexibility, and the exact nature of the flexibility desired, varied. The most common driver concerned family, leading informants to seek part-time practice options and extended leaves of absence to accommodate maternity or care of other family members. Other drivers were also reported, including an interest in work activities aside from patient care, such as management, research, teaching, or professional service. These other activities also required schedule flexibility if the physician was to retain some level of patient care practice while pursuing them. Finally, some physicians who had actually practiced part-time appeared to value the ability to spend more time with each patient because they were under less time pressure overall (despite the fact that, strictly speaking, that extra time was uncompensated).

<sup>6</sup>According to Weber (2005), only two-thirds of large medical groups (with more than 300 physicians) have EMRs, and one-fifth of mid-size or larger groups have them.

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