Developing Issue-Selling Effectiveness over Time: Issue Selling as Resourcing

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This paper considers how issue sellers advance new issues within an organization over time, and how they gain competence at doing so. Using ethnographic, archival, and interview data spanning a six-year period, it describes the moves made by members of a high-tech manufacturer to introduce environmental considerations into the design of new manufacturing processes. A significant shift occurred in the pattern of moves used over time, and explanations for the shift are found in two accompanying dynamics: The gradual accumulation of assets by the group advancing the issues and their adjustment of moves used based on earlier experiences. The findings are used to develop a model of issue selling as *resourcing*; that is, a practical accomplishment through which issue sellers' moves enact key schemas held by issue recipients, triggering their attention and action on the issue. Issue selling as resourcing builds on recent work on resources and organizational boundaries to address how organizational contexts shape opportunities for and barriers to issue selling, and to identify how issue sellers learn to operate effectively within them.

Key words: issue selling; resources; organizational boundaries; environmental management

An extensive literature on issue selling and upward influence shows that individuals outside of top management teams can shape organizations' strategic actions by directing the attention of others to particular issues and synthesizing and interpreting information from diverse sources (Burgelman 1983, Dutton and Jackson 1987, Floyd and Woolridge 1992, Dutton and Ashford 1993). These individuals and their actions are important to emergent organizational change processes and the incremental adaptation of organizations to their changing external environments (Floyd and Woolridge 1997, Dutton et al. 2001). Although the behaviors of issue sellers have been extensively studied, much less is known about how organizational contexts shape opportunities for, and barriers to, issue selling, and how these, in turn, influence the unfolding of issue selling over time and its effectiveness as a mechanism of organizational change (Dutton and Ashford 1993, Dutton et al. 2002).

Recent work by Dutton et al. (2001) advances a practice perspective (Bourdieu 1977) on issue selling and identifies issue-selling activities as "moves" or situated interactions (Pentland 1992) that express practical knowledge about how to bring about change in an organizational context. Organizational contexts are not simply backdrops for organizational activity, however; they constitute the very meaning structure individuals draw upon as they act within an organization (Clegg and Hardy 1996, Lueger et al. 2005). Central to understanding issue selling as practice, then, is an understanding of how issue sellers' moves tap into meanings prevalent in the organization to enable them to bring about

desired changes. Much empirical work on issue selling captures only a relatively "pallid representation of context" (Dutton et al. 2002, p. 367), limiting portrayals of symbolic aspects of organizational context such as meanings and norms and their role in shaping issue-selling attempts and their effectiveness.

This paper builds on the practice perspective on issue selling by using ethnographic, archival, and interview data spanning six years to explore a series of situated issue-selling efforts at Chipco,[1] a high-tech manufacturer. Focusing on the moves made by sellers, interactions between sellers and recipients, and changes in each over time, the analysis probes how the sellers came to understand the meanings, interests, and norms of the recipient group, and use this contextual knowledge to improve their ability to influence this group. Two related research questions are addressed. First, what makes issue-selling moves effective at generating attention and action from others within an organizational context? And, second, how does issue selling change over time, and what mechanisms contribute to this change?

The analysis leads to a model of issue selling as a form of *resourcing*, defined as the "creation in practice of assets" that enable actors to enact schemas that create action within organizations (Feldman 2004, p. 296). Issue-selling moves found to be effective at resourcing at Chipco struck a balance between representing novelty associated with the issues and appealing to dominant schemas. Two key empirical mechanisms contributed to issue sellers becoming better at resourcing over time: First, sellers accumulated assets such as formal authority

and normative knowledge that enabled them to launch moves; second, they learned from experiences of failure or resistance to adjust their moves.

This paper makes several contributions to the literature on issue selling and the microprocesses of organizational change. First, through empirical and theoretical attention to situated interactions, it articulates why certain moves are more effective than others and how sellers construct influential moves in an organizational context. Second, it builds on work that considers issue selling across, not simply up, the organization (Bansal 2003), focusing on issue selling as a mechanism in ongoing, pluralistic change processes that continue well after managerial attention has been attracted. Third, it answers a call for exploring how issue selling unfolds over time through the interplay of context and action (Dutton et al. 2002) by empirically identifying mechanisms by which issue sellers improve at their craft.

The remainder of this paper first reviews the literature on issue selling and introduces resourcing as a way to understand connections between organizational context, issue-selling moves, and their effectiveness. Following this, the Chipco setting, data collection, and analytic methods are described. Data are then presented on moves made by issue sellers at Chipco, shifts in the patterns of moves used over time, and possible explanations for these shifts. Finally, the discussion presents a model of issue selling as resourcing, associated mechanisms for change in issue selling over time, and implications of each.

Issue Selling, Organizational Context, and Resourcing

A number of behaviors, including the use of rational persuasion, presenting issues using data and sound business logic, and involving others, are used by those seeking to influence attention in organizations (Kipnis et al. 1980, Yukl and Falbe 1990, Dutton and Ashford 1993). Issue selling is a type of influence activity defined as "the process by which individuals affect others' attention to and understanding of the events, developments, and trends that have implications for organizational performance" (Dutton et al. 2001, p. 716). Much of the literature on issue selling and influence behavior focuses on what sellers do (Kipnis et al. 1980, Dutton and Ashford 1993, Dutton et al. 2001); factors affecting their willingness to sell issues (Dutton and Ashford 1993, Ashford et al. 1998); choices of tactics (Schilit and Locke 1982, Farmer et al. 1997) and skill at using them (Dutton et al. 2001); and organizational, relational, or other factors that predict issue-selling outcomes (Yukl et al. 1996, Dutton et al. 2002, Bansal 2003). Missing from the literature is attention to how the organizational context is experienced by those seeking to advance issues, and how this shapes the unfolding of issue selling over time (Dutton

et al. 2002). Critics have suggested that without attention to organizational contexts and, in particular, to predominant norms and meanings within them, one cannot fully understand how effective influence activities are constructed in practice, nor even what constitutes influence within a given setting (Phillips 1997, Lueger et al. 2005).

The literatures on issue selling and influence behaviors have paid limited attention to the interplay of organizational contexts and seller's actions for two reasons. First, methodologically, few studies have probed issue sellers' situated experiences, and fewer still have followed the evolution of issue selling over time (e.g., Bansal 2003). The great majority of empirical studies have relied exclusively on reconstructions of issue selling or influence attempts by their proponents through interviews, self-reports, surveys, or combinations of these methods (Kipnis et al. 1980; Yukl and Falbe 1990; Floyd and Wooldridge 1997; Ashford et al. 1988; Dutton et al. 2001, 2002). These methods may elicit accounts that emphasize rationality and control, as well as selectively identify "successful" influence efforts (Dutton et al. 2001, Bansal 2003), and as a result might reveal more about respondents' perceptions of what constitutes socially desirable behavior in the organization than about how they constructed and exercised influence (or failed to do so) in practice (Brass and Burkhardt 1993, Lueger et al. 2005).

A second limitation is theoretical and stems from a limited conceptualization in these literatures of power and resistance in organizational contexts. Without a sense of the resistance issue sellers face and their capacity to overcome this resistance, an understanding of their moves and the evolution of these over time is incomplete. Much of the early influence behavior literature essentially equated power with the exercise of influence (Lueger et al. 2005), reflecting a long-standing behavioral understanding of power as the capacity of one actor to compel another to do something he or she would not otherwise do (Dahl 1957). Some work attempts to separate power and the exercise of influence by considering seller's self-perceptions of power (Mowday 1978, Yukl and Falbe 1991, Farmer et al. 1997), while other work, recognizing that "structure provides the context within which actors operate to acquire and exercise power" (Brass and Burkhardt 1993, p. 443), pays attention to the constraints posed by individuals' hierarchical or functional locations in an organization (Schilit and Paine 1987, Dutton and Ashford 1993, Bansal 2003), and their positions in informal networks (Brass and Burkhardt 1993).

On balance, however, there is much more implicit recognition that issue sellers operate from positions of disadvantage because of hierarchical, political, or cultural constraints (Dutton et al. 1997, 2001, 2002; Ashford et al. 1998) than there is explicit attention to issue sellers'

positions in organizational power structures. Formal and informal positions are certainly important, but structural influences on power also include those attended to in structurationist accounts, including norms, schemas, and rules reproduced through ongoing social practice (Giddens 1984, Orlikowski 2000). Organizational or group norms may continually legitimate certain issues and actions, without the obvious exercise of formal authority or the explicit use of resources (Hardy 1994, Phillips 1997), leading to invisible agenda setting or "nondecision making," a pervasive form of power (Bacharach and Baratz 1963, Lukes 1974, Ranson et al. 1980) that is particularly relevant to understanding the challenges that issue sellers face.

Power, Situated Interaction, and Issue Selling
A comprehensive account of the influence of organizational context on issue selling would capture not only positional, but also normative factors that lead to the differential capacity for issue sellers and recipients to offer issue interpretations and generate action on them. Such an approach would revisit one of issue selling's early concerns with "processes of interpretation and the construction of meaning in organizations" (Dutton and Ashford 1993, p. 398), and build on recent work that sees issue selling as comprised of moves or situated interactions (Goffman 1981, Pentland 1992) that express practical knowledge about how to bring about change in organizational contexts (Dutton et al. 2001). Explicit methodological and theoretical attention to power during situated interactions can help articulate how sellers construct influential moves, and why certain moves are effective.

A "resourcing" (Feldman 2004) lens is suited to considering the multiple dimensions of power (Hardy 1994) and understanding how these shape situated interaction. While traditional perspectives see powerful groups and individuals as those who control scarce resources (Thompson 1967, Pfeffer and Salancik 1978), uncertainties, and dependencies (Crozier 1964, Hickson et al. 1971), resourcing attends to the dynamic creation of resources during interaction. It also draws attention to the skill actors use in bringing resources to bear, which may be as important as the possession of resources (Ranson et al. 1980). Treating resources broadly as "anything that can serve as a source of power in social interactions" (Sewell 1992, p. 9), resourcing is defined as "the creation in practice of assets such as people, time, money, knowledge, or skill; and the qualities of relationships such as trust, authority, or complementarity such that they enable actors to enact schemas" (Feldman 2004, p. 296). Schemas, in turn, are sources of power because they enable actors to generate meaningful action within a particular context (Feldman 2004). Schemas represent mutual understandings by members of an organization or group and may "incorporate both evaluative

sentiments about the relative worth of things, as well as implicit 'stocks of knowledge' and systems of belief" (Schutz and Luckmann 1973, p. 7). In other words, schemas and their enactment are inherent to the construction and reconstruction of meanings in organizations; those who participate in the enactment of schemas can generate consequential actions in these settings.

The work on resourcing makes several important observations that are directly relevant to understanding how issue sellers may construct effective moves within organizational contexts. First, it recognizes that the value of particular resources is highly dependent on a context and on actions and interactions within that context (Clegg and Hardy 1996, Feldman 2004). Resourcing does not ascribe power to a group or individual as an enduring property of that entity, but focuses instead on assets that are brought to bear during interaction, how these assets are valued, and whether they, in practice, result in schema enactment and action. Second, it suggests that effective efforts must create resources that are valued by *all* participants in an interaction, building on work that argues that actions must be implicitly or explicitly ratified by others to be meaningful accomplishments in social interaction (Goffman 1981, Pentland 1992). Finally, resourcing is inherently dynamic, emphasizing that valued resources are produced in the course of situated interaction, and that resistance may emerge over time as earlier patterns of behavior are disrupted and the repercussions made clear to different groups (Feldman 2004).

While resourcing provides a useful lens for theorizing issue selling by paying attention to the interplay of power, meaning, and action in organizational contexts, the unique circumstances of issue-selling demand a specialized view of resourcing. Issue selling brings together individuals with different experiences and expertise who often occupy different roles or are members of different functional groups. When people bring such specialized knowledge to an interaction, they frequently differ not only in terms of what they know, but how they know it, and how they value it (Dougherty 1992, Carlile 2002). In other words, their schemas differ. Furthermore, issue sellers likely have relatively few assets to draw on that are relevant to enacting schemas important to recipients because they may not even know what these schemas are, nor be familiar with common practices that enact them. However, a key observation of the issue-selling literature is that sellers can and do act effectively from positions of disadvantage relative to recipients. How do they do so in practice? A multidimensional view of power suggests that issue sellers may have several potential assets to draw on, and prior work identifies at least four: formal authority (ability to mobilize personnel or money), relationships (existence/quality of formal and informal relationships), expertise (on the content of issues, such as technical knowledge), and normative

knowledge (practical knowledge of prevailing organizational norms) (Dutton et al. 2001, Feldman 2004).

Effective issue selling will therefore depend on sellers' abilities to draw on their limited assets to make moves that enact recipient's schemas. The resourcing lens suggests a rephrasing of the research questions mentioned earlier. First, what makes issue-selling efforts effective at resourcing; that is, effective at enacting key schemas held by issue recipients, triggering their attention and action on the issue? Second, through what mechanisms do issue sellers become better at resourcing? The Chipco analysis seeks to answer these questions by exploring a series of situated issue-selling interactions over time.

Setting and Methods
Chipco is one of the world's largest manufacturers of microprocessor chips used in computers. Headquartered in the United States, Chipco operates a number of semiconductor manufacturing facilities (fabs) worldwide. This paper focuses on two groups at Chipco, "Tech" and "EnviroTech", [2] and their interactions. Tech, a 1,500-person technology development group, is the key group involved in developing new manufacturing equipment and procedures to enable the introduction of a major new manufacturing process generation every two years, which, in turn, enables the production of faster, more powerful chips. Roughly one-third of the hundreds of process steps required to manufacture a chip undergo a major change (e.g., new equipment), and many of the remaining steps undergo a significant change (e.g., same equipment but new operating parameters, new chemicals or gases, etc.) on this two-year cycle. Discrete projects to address particular process steps typically spanned six months to one year, and involved modifying and testing equipment and procedures at a dedicated development fab.

A relatively new group, EnviroTech, comprised of 11 members, was formed within a few years of this study to work with members of Tech to reduce the environmental impact of future manufacturing processes. For decades, Chipco's environmental practices, like those of many large manufacturing companies, had focused mainly on compliance with regulation and had been led by the Environment, Health, and Safety (EH&S) group. The creation of EnviroTech was an effort to bring consideration of the issues much earlier in the process development cycle, preventing cost and/or delays that could result if environmental issues cropped up during manufacturing rollout. The simultaneous creation of the "EnviroCouncil," a decision-making body chaired by an EnviroTech manager and comprised of members from each of EnviroTech, Tech, Facilities, Manufacturing, Materials, and EH&S, formally established EnviroTech's decision-making authority and its interaction patterns with other groups. Modeled on the standard and successful TechCouncils,[3] the EnviroCouncil reviewed data on process development projects with environmental implications, made and authorized decisions for environmental approaches, and sought the authorization of other relevant TechCouncils for such decisions.

While the creation of EnviroTech and the EnviroCouncil signaled Chipco senior management's early strategic attention to such issues, these groups and the issues they sought to advance remained largely unknown to the majority of members of Tech at the time of this study. The study probed how members of the groups operated as issue sellers during and following their formal emergence. I include, as the issue sellers, both members of EnviroTech and the EnviroCouncil because a small core set of individuals from each worked closely together on the projects. For simplicity, I use the label EnviroTech to refer to all of the issue sellers, except in cases where it is important to distinguish one body from another.

Data Collection
For this paper, I focus on seven projects that were aimed at addressing some environmental aspect of a specific manufacturing process under development.[4] In the six-year period covered by this study, 15 such projects had been initiated.[5] In identifying projects, I used a working definition that was consistent with how Chipco parsed its work, and with other research on product and process development (Hansen 1999). Projects were oriented around attaining a particular goal (e.g., selection and development of a piece of equipment to meet specified operating parameters), had defined start and (intended) end points, involved a dedicated project team comprised of managers and engineers, and their outputs contributed to a larger innovative effort (development of a new manufacturing process generation). Projects in this case provided tangible settings for issue selling; their similarity allowed for comparison of efforts to sell a related set of issues over time, and their differences enabled contrasts to be observed. Consistent with other researchers (Hansen 1999), I eliminated six very early-stage projects from the analysis. Two further projects were eliminated because I lacked sufficient sources of data on them to triangulate my findings.[6] After eliminating these, I was left with seven projects for analysis, which included both successes and failures.

The primary method I employed for data collection was ethnographic observation, based on nine months of full-time (45+ hours per week) participant observation at Chipco. As a participant, I was a student intern in the EnviroTech group and was physically located at the Tech site, where I interacted regularly with members of Tech and developed a number of close informants. The intern role was a natural one from which to conduct participant observation because I was an accepted, yet temporary, member of the organization, and others expected me to observe, question, and learn about their

Table 1   Data Sources by Project and Project Description

Project	Project description/need	Interviews (number)	Documents (archival or contemporary)	Observations
Destructor	Eliminate toxic chemical from liquid waste stream associated with newly developed high-performance process step.	✓ (7)	✓ (Archival)	—
Greenhouse	Control releases of specialized gases associated with global climate change over several future process generations.	✓ (6)	✓ (Archival and contemporary)	✓
Recycler	Extend use of equipment to recycle a high-volume process chemical for new process generation, or adopt an alternative approach to recycling or reusing the chemical.	✓ (4)	✓ (Archival)	—
Capturer	Develop equipment to capture secondary air emissions associated with a technical approach piloted for the Greenhouse project.	✓ (4)	✓ (Contemporary)	✓
Blue Skies	Eliminate visible, yet nontoxic, air emissions plumes associated with certain process steps.	—	✓ (Contemporary)	✓
Decision tool	Develop a structured decision process to guide the EnviroCouncil's decision making on environmental process development projects.	✓ (2)	✓ (Contemporary)	✓
Clean Air	Significantly reduce hazardous air emissions associated with newly adopted process equipment.	✓ (3)	✓ (Contemporary)	✓

practices.[7] I entered the field with a goal of understanding how environmental issues were surfaced, articulated, and acted upon within Chipco's manufacturing process development activities. I wrote field notes daily during the course of observations and at the end of each day to capture observations in more detail. In writing my field notes, I attended to particular projects that involved the introduction of environmental considerations into process development, and also attended carefully to the context in which these projects were undertaken, collecting detail that would be used to construct a description of the Tech and broader Chipco culture (Howard-Grenville 2007) that informs the analysis of the organizational context.

I collected additional data through a total of 26 semistructured interviews with project participants, and documents related to each project (see Table 1 for data sources by project). I sought to interview every manager and as many engineers as possible who participated in the projects, and was able to do this with a handful of exceptions.[8] The interviews probed who was involved, the project history, key challenges, how these were resolved, and the interviewees' attributions of factors (organizational, technical, etc.) that contributed to the challenges and their resolution. Documents collected included project update presentations, meeting summaries, and other communications regarding project developments. The interviews and documents were critical data on those projects initiated prior to my participant observation period, with the documents ensuring that I did rely on interviewees' retrospective accounts

alone as sources of the moves (Golden 1992). I also used interviews and documents to better understand the projects I observed. Several of those interviewed became regular informants with whom I was able to follow up informally, filling in gaps in my data, and checking discrepancies.

Data Analysis

Coding and Within-Project Analysis. I assembled all of the documents, interview notes, and relevant original field notes for each of the seven projects. To perform a detailed within-case analysis (Miles and Huberman 1994) that would allow me to consider the complexity and preserve the narrative sequence of each project (Abbott 1992), I coded the data by project, using emergent themes (Glaser and Strauss 1967, Miles and Huberman 1994). I coded for *moves* used by those advancing the environmental considerations (what did they say and/or do?), as well as *diagnoses* (what was wrong?) and *evaluations* (how successful were any approaches taken?). I was guided by earlier work that defines *moves* as distinctive units of situated interaction captured in speech or action (Goffman 1981, Pentland 1992) and *diagnoses* as problem and issues attributions (Benford and Snow 2000) made as those involved prepared and carried out their moves. For example, on the Recycler project, data coded as an "environmental" diagnosis included a communication between EnviroTech and site environmental specialists who expressed "concern that there was not enough environmental and safety representation" on the project team and elaborated

Table 2 Success or Failure of Projects

Project	Project success criteria						Overall success or failure
	Adopted	On-time implementation	Solution meets environmental goal	Solution meets production goal	Evaluation by proponents	Evaluation by recipients	
Destructor	✓	✓	Partial ✓	×	Failure	Failure	Failure
Greenhouse	Pending	× (2+ years late)	Unknown	Unknown	Failure	Failure	Failure
Recycler	×	N/A	×	✓*	Failure	Success*	Failure
Capturer	Pending	Late	Unknown	Unknown	Failure	Failure	Failure
Blue Skies	✓	Pending implementation	Expected ✓	✓	Success	Success	(Early) Success
Decision tool	✓	N/A	N/A	N/A	Success	N/A	Success
Clean Air	✓	Early (3 months)	Partial ✓	✓	Partial success	Success	Success

*The Recycler project is indicated as meeting a production goal and successful according to recipients, because it resulted in NOT implementing Recycler units for the new process generation, and Tech and Manufacturing groups opposed their implementation.

environmental concerns that needed attention. Moves captured more direct interactions between EnviroTech and those they sought to influence. For example, also on the Recycler project, an EnviroTech presentation that outlined criteria used for analysis and offered specific recommendations ("...a continuous 150 mL/min process with...on-site reprocessing") was coded as a "providing data" move.

Finally, I characterized the overall success or failure of a project by using a composite of six measures: evaluations of satisfaction with the project outcome by (1) the proponents of the project (EnviroTech) and (2) the recipients of the project (Tech); (3) whether the environmental solution was adopted or not; (4) if adopted, whether it had been implemented on time (to integrate with the appropriate process technology); (5) whether the solution had met its environmental goals; and finally (6), whether it had met process goals. These measures and overall characterizations are shown in Table 2.

As I was coding, I simultaneously created a time line of key events and decisions, and a context chart showing who was involved for each project. Figure 1 depicts the timing and duration of each project, and indicates the involvement of EnviroTech and EnviroCouncil members in each. It is important to note that, despite the formal creation of the EnviroTech group in the middle of the time period, individuals who would become members of this group were extensively involved in earlier projects. All but the earliest project included at least one, and up to all, of the three managers who would run the EnviroTech group.[9] This continuity is significant and allows me to treat the group as a whole as issue sellers.

Between-Project Analysis. I compared the coded data between projects by moving back and forth between project data and the emerging descriptions of each code.

I modified and refined descriptions of the codes, ensuring that each type of move and diagnosis was consistent across its occurrences.

Across-Project Analysis. I analyzed the coded data across all of the projects over time to explore connections between moves made, aspects of the context for issue selling, and outcomes of the issue-selling efforts. This analysis expanded my lens, accounting for the observation that moves cannot be fully understood "isolated from the situational particulars of the context and the sequence of interaction in which they occur" (Pentland 1992, p. 530). For analyzing relationships between actions and broader organizational or institutional norms over time, Barley and Tolbert (1997) suggest charting flows of actions, analyzing them for patterns, and then linking shifts in these patterns to other data that capture changes in the organizational or institutional context. Following my observation of a distinct shift in the pattern of moves used across the projects, I used Barley and Tolbert's (1997) model as a sensitizing instrument to guide my analysis of what else was changing over time, and to explore connections between these patterns of change. This led me to consider whether and how EnviroTech's assets were changing over time, and whether and how the nature and experiences of the interactions themselves were changing.

Issue Selling at Chipco

Before discussing the moves made by EnviroTech to advance environmental issues, it is necessary to understand, in more detail, their position relative to Tech. As mentioned earlier, EnviroTech was a much smaller group (11 members, compared to Tech's 1,500), and was formally established less than three years prior to my fieldwork (Tech had been in existence for 20 years). Although created to interface directly with Tech, EnviroTech did not directly report to Tech or share its

Figure 1 Project Timing, Formal Structural Changes, and Involvement in Projects
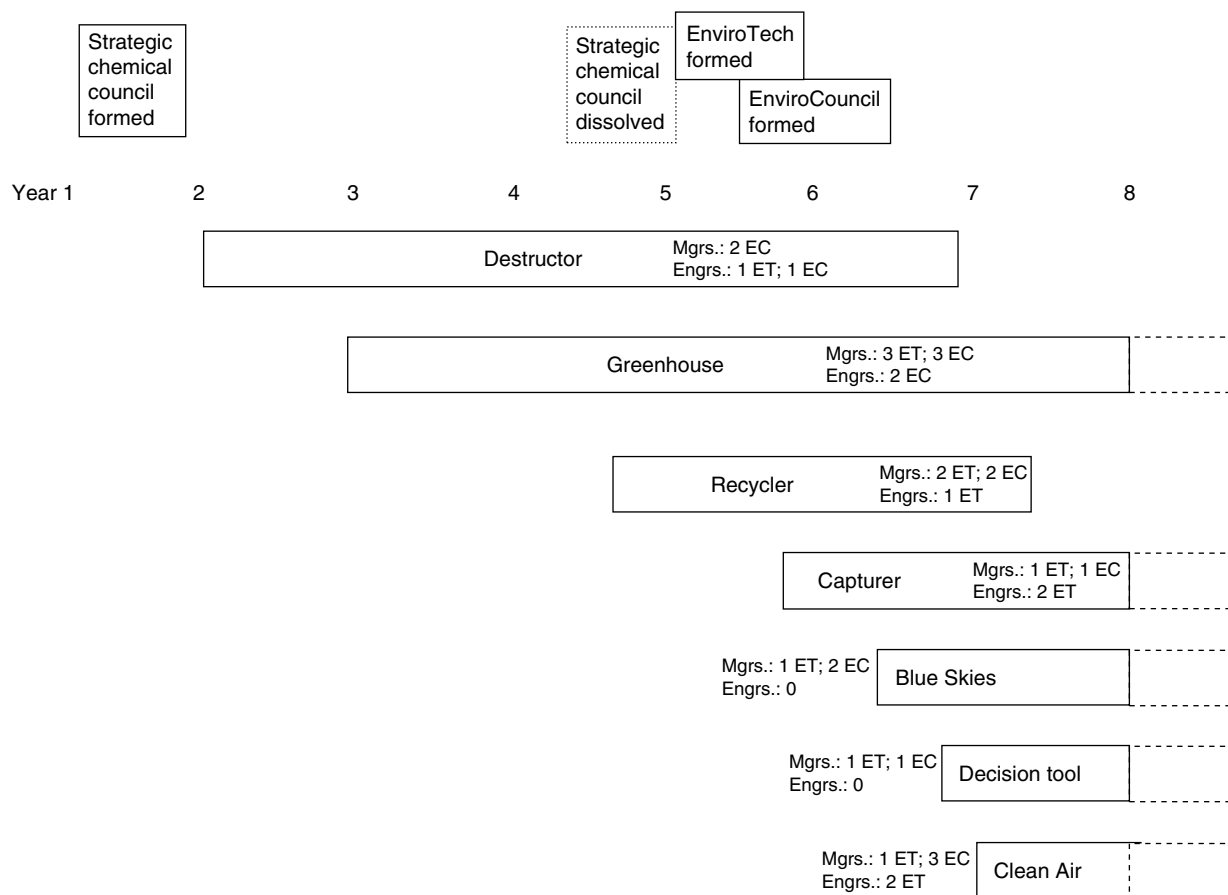
Notes.
• Dashed lines indicate ongoing project.
• Involvement indicated as: Mgrs.: Number of Managers involved from EnviroTech (ET) and the EnviroCouncil (EC); Engrs.: Number of Engineers or Technicians involved from EnviroTech (ET) and the EnviroCouncil (EC).

management structure, but reported to Materials,[10] a group that supported operations in Tech and the Manufacturing fabs. EnviroTech was also two levels lower in the formal hierarchy than Tech. The EnviroCouncil was EnviroTech's formal connection to decision making within Tech, because it was given the authority to approve decisions on environmental aspects of process development, and to coordinate with TechCouncils on this (the latter, in practice, occurred infrequently, a point I revisit). EnviroTech and the EnviroCouncil relied on Tech senior management or the Technology and Manufacturing Steering Committee (to which both Tech and Materials reported) for budgetary support for any significant development projects.

The nature of Tech's work and its role in Chipco also created a distinctive set of schemas. To achieve the development of new manufacturing process generations and their deployment to fabs on a relentless two-year cycle, Chipco operated to a norm that every fab installed identical process equipment, operating to identical specifications. As the key development group,

Tech's decisions and actions were critical to this accomplishment, which contributed to a sense of their centrality and their focus. "The bottom line is that you have to deliver your process module on time, because if there's no new process there's no [Chipco]," one engineer stated matter-of-factly. Individuals with technical expertise were paramount to this; one Tech manager noted "the critical players are the ones who take on the biggest challenges." Roles within Tech were highly specialized around aspects of the process technology itself, and interaction limited and oriented around what was necessary to meet prescribed process specifications. A Tech engineer commented that he and his peers "all have their blinders on" to focus exclusively on their part of the process. Interdependencies were present, but were managed through agreement on measurable process specifications. The common language within Tech was data. Controlled experimentation and data collection contributed to practical knowledge, which was useful for one primary purpose, to develop and deliver processes that worked within the required specification. One

manager observed that Chipco doesn't make decisions based on "a conjecture about the future." "If you say there's an X% chance of something happening, the [Tech managers] would say 'come back when you know for sure,'" he added.

In this setting, problems were things that impeded the development or operation of effective, reliable manufacturing processes. One Tech manager explained "[Chipco] tends to focus on things that limit [manufacturing] performance, the whole corporate psyche is around problem-solving." Practical, technical, and data-driven problems were those considered the norm. Such problems were solvable through focus, hard work, and the deployment of technical expertise. Work at Chipco, according to one manager, was "all about identifying a gap, developing an indicator, lining up the people to do it and executing on it." Operating in such a strong normative setting and from a position of formal disadvantage, a key challenge for EnviroTech was to generate through its interactions problems that were regarded as such by Tech. In other words, EnviroTech needed to appeal to Tech's knowledge and evaluative criteria—its schemas—to generate action on the new issues.

Moves Made in Issue-Selling Efforts

Six moves were used by EnviroTech in efforts to advance the environmental issues: (1) asserting decision processes, (2) taking control, (3) appealing to commitments, (4) working within constraints, (5) providing data, and (6) offering explanations. While each move was used on almost every project, there was a distinct shift in the pattern of moves used over time. The shift is explored following a brief description of each move.

Asserting decision processes involved expressing intended or actual adherence to Tech's formalized decision processes. For example, in giving an update on the Recycler project, an EnviroTech manager was careful to note that the appropriate formal bodies had been consulted and procedures followed, stating "the decision was ratified by the [Tech] steering committee and now needs to be ratified by the JEM (Joint Engineering Management committee) and the [EnviroCouncil]."

Taking control involved those advancing the issue initiating rapid and decisive action on it. While it might be seen as contradictory to the more measured approach of deliberately and publicly adhering to particular decision processes, taking control was complementary in this context. Tech's decision processes existed to enable the rapid and accurate resolution of problems, and equally important to this end was an orientation to firmly take control of and drive solutions. As a manager involved in the early stages of the Greenhouse project explained,

> When [Chipco] was first looking at [greenhouse gas emission] issues we didn't know whether we would have to do something or not, but we didn't want to be in a position of having to do something but not being ready with a technical solution.

Appealing to commitments involved raising implications of the issue for compliance with Chipco's formal or informal environmental policies or regulatory obligations. For example, the team working on the Recycler used input from environmental specialists to argue that *not* using the Recyclers would involve "moving in the wrong direction on our most visible parameter, which might mitigate against achieving a [regulatory] license 2 or 3 years from now," and that it would create an issue for "site commitments to the county and community for aggressive pollution prevention."

Working within constraints involved pragmatic efforts to understand and accommodate internal limitations that might influence the type and timing of actions on an issue. For EnviroTech, this meant recognizing and accommodating constraints associated with the underlying process technology and its timing. For example, an EnviroTech engineer noted in a presentation on the Greenhouse project:

> Because you need [chemical F] to clean [a process compound], you are operating within a box; with [chemical F] you are either going to get lots of [hazardous air emissions] and a little [greenhouse gases], or lots of [greenhouse gases] and a few [hazardous air emissions]—[chemical F] has to come out one way or another.

Providing data involved collecting and sharing information to represent aspects of the new issue in detail. For EnviroTech, this took the form of sharing information on the current environmental performance, process performance, cost, and other parameters, and making projections about these parameters under various alternatives. For example, the EnviroCouncil chair circulated an update on the Clean Air project as part of a weekly communication with other managers, noting:

> Significant progress has been made on recipe optimization ([chemical G] emissions of [xxx lbs/ws][11] are now at about [yyy lbs/ws]) and at identifying two candidate technologies for emissions treatment which appear to operate at least at 95% removal efficiency.

While the data provided might implicitly account for environmental commitments or constraints, it tended to be conveyed as "just the facts." On the Recycler project, one team member communicated:

> [An overseas fab] is currently close to the maximum salt ceiling with [Recycler] running. Removing [the Recycler] but going to [the new process generation] would increase [chemical S] effluent by approximately 2X.

Related to providing data, *offering explanations* involved presenting detailed interpretations and implications of issues to critical audiences. It differed from providing data in that it made explicit the reasons for one interpretation over another, or the need for one solution over another. Often, offering explanations put issues in familiar terms for the audience. On the Clean Air

Table 3 Number and Type of Moves Used by Project

Moves	Destructor	Greenhouse	Recycler	Capturer	Blue Skies	Decision tool	Clean Air
Assert decision processes	**12**	6	10	**7**	3	4	3
Take control	4	**14**	2	6	4	4	7
Appeal to commitments	—	5	**13**	—	1	2	4
Work within constraints	6	12	3	3	5	6	11
Provide data	5	7	9	6	**13**	4	**15**
Offer explanations	—	6	5	2	9	**12**	13
Total	27	50	42	24	35	32	53
Percentage of providing data and offer explanation (%)	19	26	33	33	**63**	**50**	**53**
Percentage of other moves (%)	**81**	**74**	**67**	**67**	37	50	47
Project outcome	**Failure**	**Failure**	**Failure**	**Failure**	**Success**	**Success**	**Success**

Notes. Bold face shows most prominent move for each project; — practice not used in project.

project, for example, the EnviroCouncil communicated internally using air emissions metrics ("the goal...is to reduce from [xxx lbs/ws] to [zzz lbs/ws]"), but their communications to Tech used terms that captured this audience's concerns about manufacturing capacity, asserting that "current estimates of [hazardous air emissions] indicate a major constraint on site capacity, emissions are approximately 20X of the process goal."

Shifts in Moves over Time and Across Projects
Several of the moves used by EnviroTech closely resemble those identified in earlier work on issue selling, reinforcing the findings that sellers use formal approaches that match prevailing cultural norms (asserting decision processes), customize their moves to an audience (offering explanations), prepare carefully by educating themselves and assembling information on the issue (working within constraints, providing data), and move opportunistically to advance issues when they might be most salient (taking control) (Dutton and Ashford 1993, Dutton et al. 2001). These findings alone say nothing, however, about why particular patterns of moves were associated with successful projects whereas others were not. Nor can they explain a shift in the pattern of moves used over time. Two moves, providing data and offering explanations, were much more prevalent on later projects (comprising one-half or more of all moves used) than they were on earlier ones (comprising one-third or less of all moves used). Table 3 shows counts of moves used in each project and a shift in moves that closely matches a shift in project success.

What led to this change? Why did the pattern of moves shift over time, and how did patterns used on the later projects influence more successful outcomes? Using Barley and Tolbert's (1997) logic for tracking the unfolding of actions within organizational contexts over time, I considered two other patterns in the data. First, using within-project data, I analyzed changes in EnviroTech's assets using categories identified as important to issue sellers' abilities to make effective moves

(Dutton et al. 2001, Feldman 2004). Second, I used the coded diagnoses from the within-project analyses to understand changes in the experience of the interaction itself that might have triggered or reflected changes in the choice of moves. To explain each dynamic and its link to the shift in moves, I focus in depth on three projects, one occurring early (Destructor), one in the middle (Recycler), and one late (Clean Air) in the time period studied. Table 4 summarizes the outcome of the additional analyses for these three projects.

Accounting for the Shifts: Assets and Interactions
Starting from a position of severely limited assets of formal authority, relationships, expertise, and normative knowledge on the Destructor project, EnviroTech gained assets of each type over time. Part of this accumulation was because of the formal establishment of EnviroTech and growth in its members as well as their expertise. It is important to remember that these assets are potentials, however, until they are mobilized in particular interactions. Table 4 shows significant changes in the interaction on each project and, in particular, in how the environmental issues were portrayed. On the Destructor project, the environmental issues remained largely unelaborated; on the Recycler project they were pitted starkly in opposition to cost considerations; and on the Clean Air project they were represented on roughly equal footing with technical considerations. Summaries of these projects show connections between the assets, moves, experiences of interaction, and outcomes of the issue-selling efforts. They provide different answers to the question of whether the issue-selling efforts enacted the recipients' schemas, and if so, how they did so.

The Destructor Project. The Destructor project involved the development of equipment to remove (and destroy) a toxic chemical present in the liquid waste of a highly successful and newly developed manufacturing process step. Those who initially developed the equipment and worked with Tech to deploy it to manufacturing fabs with the new process step had extremely

Table 4   Assets, Predominant Moves, and Experiences of Interaction on Three Projects

Destructor project (early)	Recycler project (middle)	Clean Air project (late)
Assets		
Formal authority—extremely limited; project preceded formal creation of EnviroTech.	*Formal authority*—some; EnviroTech and EnviroCouncil formally created (only three mgrs. and three engrs. in EnviroTech).	*Formal authority*—better established; EnviroTech and EnviroCouncil in existence two years.
• The group originally developing the Destructor technology "didn't have the resources, they use[d] one engineer to support a whole lot of systems." (Tech mgr.)	*Relationships*—few; project team was highly dispersed geographically and few had worked together before.	*Relationships*—some of high quality; 1 mgr. with Tech experience heavily involved in EnviroCouncil.
Relationships and *expertise*—very limited; relationships characterized by ridicule (based on expertise/competence) rather than respect.	*Expertise*—limited in relevance; environmental expertise largely from EH&S employees with limited manufacturing process knowledge.	*Expertise*—moderate and relevant; five new EnviroTech engrs. and technicians since Recycler project, three of whom were former members of Tech.
• During Destructor development "Pressure disks were put in backwards despite being labeled front and back! That's just the tip of the iceberg in terms of problems." (Tech mgr.)	*Normative knowledge*—moderate; EnviroTech manager clear in his commitment to have the team follow Tech's decision processes.	*Normative knowledge*—significant; more sophisticated and strategic than earlier forceful assertions of following Tech's decision processes.
Normative knowledge—limited; group working on Destructor had little experience working with Tech.	• "I will be working to drive to one method for all [Chipco] sites." (EnviroTech mgr.)	• "We're going to get our butts kicked on Monday in the [Tech steering committee meeting]. …We need to first show why the [new etch equipment] is needed in the process,…then we will go over [the supplier's] approach for optimization, then we need at least something, first ideas from [EnviroTech] on how to treat these [emissions], and then we will talk about resource issues as we will need a big pot of money to spend instantaneously." (EnviroCouncil chair)
• "[Tech] gave [the group] money to buy spare parts and six months later they were still trying to write the PO [Purchase Order]; if this had been [Tech] it would have been done in an afternoon." (Tech mgr.)		
Predominant moves		
Assert decision processes	Appeal to commitments	Provide data
	Assert decision processes	Offer explanations
Experiences of interaction (% of diagnoses)		
Centered on management of the project, competence of the project team, and time and attention devoted to it (56%).	Split between environmental concerns (35%) and cost concerns (39%).	Centered on environmental concerns (32%) and associated technology/process concerns (42%).
Environmental concerns unelaborated (10%).	• "The ultimate question is do we need [chemical recycling]…the finance people are doing a model that will show there is no ROI." (Manufacturing member)	• This may be "the biggest environmental problem we have ever faced." (Mgr at EnviroCouncil Meeting)
• "The bound [chemical] is so stable [that its undetectable] but since the regulations required [treatment], there was no alternative." (Environmental specialist; Tech mgrs concurred)	• "Isn't this proposal contrary to the long-term strategic objective of minimizing environmental impact regardless of whether we are inside our license or not?" (EnviroTech member)	• "This may be the first [piece of process equipment] where the environmental implications are the biggest technical hurdle to bringing it in." (Mgr. commenting on meeting with Tech Senior Management)

limited assets of formal authority, expertise, and normative knowledge to draw on. Once it was widely deployed, the Destructor equipment was plagued by operational problems, some of which caused fabs to shut down periodically and others of which posed safety hazards. Several years after the Destructor equipment was first developed, a Joint Engineering Team (JET) was formed that drew engineers from the Tech, Facilities, and (the now newly created) EnviroTech groups to address the problems. The key move—asserting decision processes—used on this project represents efforts by the JET and others to closely mimic Tech's standard approaches, perhaps to redress impressions of incompetence and poor execution associated with the initial lack of assets.

While the equipment failure and limited assets contributed to the failure of the issue-selling effort, the

nature of the interaction adds to the explanation. Environmental considerations were never elaborated on this project. Even late in the project, a Tech manager noted "it was never an environmental problem, in fact, I don't think they ever had a detectable level of [the chemical] in 5 years…but it was a design problem, an engineering problem." This characterization and an insistence on fixing Destructor problems through standard Tech approaches masked important differences raised by the novel chemical and technology being used. One EnviroTech engineer observed "at first there was very little fundamental understanding of the underlying mechanisms of the [chemical] treatment." Another JET engineer noted "the…technology was new to the company" and people "thought this was a high temperature high pressure system but it wasn't…it shows [Chipco's] inexperience with such equipment."

Ironically, the experiences on the Destructor project did trigger a key "problem" schema within Tech when the malfunctioning equipment became a constraint on manufacturing. A Tech manager reflected "it became very clear that [equipment like the Destructor] is absolutely fundamental to the success of the fab." However, this evaluation only reinforced Tech's schemas. One Tech manager concluded "if we had to do it again, [Tech] would have owned the waste system." A Tech engineer observed "to make the system bulletproof, everything has to be run like [Tech]." These conclusions were not only counter to the goals of EnviroTech, but they were reached through schemas being enacted "accidentally." The pattern of moves used here, with its heavy emphasis on asserting decision processes, failed as a resourcing effort.

The Recycler Project. The Recycler project centered on a decision to adopt equipment to recycle a high-volume chemical for reuse in a manufacturing process step, or to reduce consumption of the chemical through some other means. With the formal creation of EnviroTech and the EnviroCouncil in the works, a new-found authority to introduce environmental criteria into process-related decisions served as a key potential asset on this project. The predominant moves, appealing to commitments and asserting decision processes, reflect this. Interactions were highly contentious (diagnoses were split roughly equally between environmental and cost considerations, see Table 4) and recipients questioned the relevance of environmental criteria. One Manufacturing manager sought "an absolute ruling, legal or otherwise" on Chipco's "real risks (not perceived)" of having a chemical supplier "come in and take out [the chemical] in a tanker truck and sell it off" as opposed to using the Recycler. This prompted an EH&S manager to reply angrily "the liability potential is not 'perceived.' It is real…!!"

While the moves on this project made the new criteria associated with the environmental issues eminently clear

(in contrast to the Destructor project), they too failed to enact the schemas of the recipients. The Recyclers were not regarded as a solution to a problem, for there was no problem to begin with, according to the schemas held by members of Tech and Manufacturing. One manager's comments reflected a fundamental lack of acceptance of a connection between addressing the environmental issues and attaining any other valued goals:

> WHY SHOULD WE [RECYCLE]? We should [recycle] when it is the right thing to do for [Chipco]. We should [recycle] when it is the right thing to do for the process. We should [recycle] when it is the right thing to do for the environment. We should [recycle] when the payback shows a good return on our investment. SHOULD WE [RECYCLE] WHEN NONE OF THE ABOVE ARE MET? (emphasis in original)

Not surprisingly, the moves did not generate the desired action for EnviroTech. After many meetings, a decision was reached to reuse the waste chemical in another (less environmentally efficient) way at the fabs, rather than install new Recyclers. Several years later, the required infrastructure changes were incomplete at several sites, and the reuse approach was formally dropped in response to cost cutting.

The Clean Air Project. The Clean Air project arose when it became clear, very late in a process development cycle, that air emissions from newly selected process equipment exceeded an internally established goal by a factor of 20. While their assets had changed considerably from the earlier projects, their late awareness of the problem shows that EnviroTech still operated from a position of significant disadvantage. One manager told the EnviroCouncil "we have only had a week to understand this problem…we got blindsided." Discussions on the equipment itself had been going on for months at various TechCouncils. This and other projects led an EnviroTech manager to reflect "most of what we do are still tack-on solutions."

Despite this, members of EnviroTech had accumulated expertise and normative knowledge (Table 4) that enabled them to make moves dominated by providing data and offering explanations. Providing data made clear the new constraints posed by addressing the issue. For example, an EnviroTech engineer reported that they would need to develop equipment that was 96% efficient at removing the air emissions, could treat another hazardous material present, and that no known technologies were available to do so. Offering explanations put the issue in familiar terms for the audience. To communicate with Tech, EnviroTech used a chart depicting limitations on manufacturing capacity (in terms of wafer starts, a key throughput metric, *not* in terms of emissions) if the emissions went untreated. An EnviroTech manager asserted "this may be the first [piece of process equipment] where the environmental implications are the

biggest technical hurdle to bringing it in." Representing the environmental issues in this way not only made them a familiar type of problem for Tech, but also made them solvable. EnviroTech secured money and significant engineering support from Tech and found a solution in only four months time, beating the schedule for development. Explaining the project's success, an EnviroTech engineer noted "it was the first time we treated [environmental equipment] like a process tool."[12] It was also the first time EnviroTech's moves had so effectively enacted Tech's schemas for what constituted a problem.

Issue-Selling Effectiveness: Difference and Dependence

Taken together, the Chipco data suggest that effective patterns of moves for issue selling in this context were those that enabled EnviroTech to represent what was novel and different about the issue, but critically connect this to Tech's schemas for what constituted a problem and, in particular, a solvable problem. The literature on work across organizational boundaries identifies two characteristics that must be addressed for groups with specialized knowledge and interests to interact effectively: difference and dependence (Carlile and Rebentisch 2003, Carlile 2004). Difference includes differences in the type or quantity of specialized knowledge or expertise members bring to an interaction (Carlile 2004), and it may show up in the language or metrics used, technical or other requirements of the work, and associated criteria used for evaluation. Dependence captures the extent to which one group depends on another group's expertise, knowledge, or work outputs to accomplish its work (Carlile 2004). In the language of schemas, difference captures the "gap" between schemas held by the issue sellers and recipients, and dependence captures whether and to what extent this gap matters. These concepts are important here because the patterns of moves for issue selling appeared to represent difference and dependence in quite different ways.

On the Destructor project, neither differences nor dependencies were exposed by the moves, although both were present and became clear when the Destructors failed. Heavy and largely unsuccessful reliance on standard Tech approaches as the "fix" on this project suggest a kind of failure that is common when new differences and dependencies go unrecognized and existing practices are reused (Carlile 2004). Moves used on the Recycler project, in contrast, revealed significant differences. In fact, the pattern of interactions suggests that the difference or gap between the schemas held by EnviroTech and Tech was *too* large because the two groups remained highly polarized in their interpretations of the issue and how they valued it. Dependence was not established, so the issue remained inconsequential for Tech. Only on the Clean Air project did the pattern of moves reveal both

differences and dependencies during interaction. Providing detailed data on the air emissions and associated treatment challenges demonstrated how the requirements for this issue differed from what was typical within Tech, but offering explanations put these requirements in terms that represented them as highly relevant problems for Tech.

Effective issue selling at Chipco seemed to demand that *both* differences and dependencies were revealed through the interaction. Difference without dependence risked painting the issue as too far "out there" as the Recycler project showed. On the other hand, dependence without difference could result in an issue being "captured" by the recipient group as if it were their own, with the result that the solution invoked would fail to address the novel requirements associated with the issue. The postscript to the Clean Air project illustrates this risk. Tech was fully satisfied with the adopted solution, but EnviroTech regarded it as environmentally suboptimal because the chemical removed would undergo multiple transformations (from gas to liquid, liquid to solid, and solid to landfill) before its eventual disposal. EnviroTech ultimately sought to recycle the gas directly, but this was, according to one manager, "a three to five year [project]." An EnviroTech team, with no Tech members, was starting work on it, but the work would proceed separately as it failed to fit into the dominant mode of process development. Indeed, with an immediate technical solution secured, members of Tech seemed oblivious to the larger environmental question. One Tech engineer giving an update on the Clean Air project had the pollution prevention hierarchy "Reduce, Reuse, Recycle, Abate" running across the top of each presentation slide, but seemed unmoved by the fact that the bulk of his presentation focused on the technical details of proposed abatement equipment, the least environmentally desirable solution in the hierarchy.

Issue-Selling Evolution: Accumulating Assets and Learning from Experience

Skillfully representing difference and dependence in a way that enacted Tech's schemas did not come automatically for EnviroTech. Both the dynamics explored—accumulations in EnviroTech's assets and changes in their experiences of interactions—contribute to explanations of how the group became more effective at issue selling. The first dynamic suggests that they acquired assets over time that could be used to launch different patterns of moves. For example, as the group grew in numbers and gained engineers with Tech experience (see Table 4), it undoubtedly improved its ability to collect and provide data.

The second dynamic suggests that EnviroTech adjusted its moves based on learning from experiences of interaction. Representing environmental criteria very explicitly on the Recycler project can be seen partially as a

response to failure on the Destructor project, where such differences had not been made clear. Further, the moves to provide data and offer explanations on the Clean Air project can be seen partially as a response to the significant resistance encountered on the Recycler project, where the recipients simply did not value the differences nor respect the terms in which they were conveyed.

Within individual projects, adjustment of moves based on earlier interactions was also seen, as the Blue Skies project, undertaken successfully and around the same time as the Clean Air project, illustrates. In project team discussions, environmental specialists labeled community concern over visible, but harmless, emission plumes as "emotive" for certain communities, exchanged anecdotes about public queries regarding the plumes, and observed that "the public affairs people don't want to have to explain it anymore." However, following a presentation where others questioned spending money on the equipment simply to address a public perception issue (one Manufacturing manager challenged that "[Chipco] would get better press by putting the money into local schools"), the team provided the following justification:

> [Chemical N] reacts with [chemicals F and C] to form visible plumes, typically when [chemical F or C] > 1 ppm (current average is 0.5 ppm), so plumes are an intermittent problem. Scrubber[13] performance is poor in the presence of [chemical N] and this is complicated by the dilution of the exhaust. ...[the first reason for the Blue Skies project is] to improve house scrubber performance.

The issue of public concern was addressed later in the presentation, following more data on emissions. The intentional manipulation of the message suggests that EnviroTech countered the earlier resistance by selectively portraying differences and dependencies to enact the problem schemas of others.

A final possibility remains—that issue selling became more effective because Tech's schemas changed to make the group more receptive to the environmental issues. This explanation would not account for the shift in EnviroTech's moves, nor does the available evidence support such a schema change. Indeed, following the Clean Air project an EnviroTech manager reported that he'd received "very strong feedback from [Tech senior management] that they wanted more solutions like [Clean Air]" because of its strong resemblance to mainstream Tech projects—focused, technically oriented, and blind to local differences in environmental regulations or requirements. This suggests that Tech's schemas were reinforced, if changed at all, rather than revised, an outcome that might suggest EnviroTech failed in its issue-selling efforts. Such a conclusion would miss the significant changes that had occurred, however, as EnviroTech acquired assets and learned from experience to make moves that enacted Tech's schemas and generated action. In other words, they had gained competence at resourcing for issue selling in this context.

Discussion

The Chipco analysis suggests that issue-selling moves can be seen as discrete efforts at resourcing; that is, efforts to enact the schemas of recipients so they attend to and act on new issues. A model of issue selling as resourcing is depicted in Figure 2, with movements within each issue-selling effort numbered. Moves draw on the seller's stock of potential assets of formal authority, relationships, expertise, and normative knowledge (1). The effectiveness of moves at enacting recipients' schemas depends on the capacity of the moves to expose differences and dependencies during interaction, and on the evaluations by recipients of the relevance of these differences and dependencies (2). Differences stem from sellers' and recipients' specialized knowledge, the internal or external requirements demanded of their work, and the associated criteria they use to evaluate it. Dependencies stem from the constraints and affordances posed by the work of the sellers on that of the recipients. Finally, evaluations of experiences of resistance, failure, or success during interaction can be used by sellers to adjust their moves for future selling efforts (3), and can be used by recipients to alter or amend their schemas for what constitutes a problem (4).

The model also suggests that issue selling is an emergent form of resourcing, with later efforts informed by earlier ones. The three horizontal arrows show the mechanisms by which issue selling may change over time. The lowest arrow captures the accumulation of assets over time by issue sellers, which can result from changes in the composition and authority of a group, or its members' expertise, relationships, and normative knowledge. The middle arrow captures sellers' active adjustments in choices of moves based on experiences of failure, resistance, or success in prior selling efforts. The top arrow captures changes in the recipient's schemas as a result of being exposed to the issue and its implications. The associated logics are, respectively, a logic of accumulation of the capacity to make moves, a logic of learning over time to make better moves, and a logic of changing the minds of the targets of influence. All three mechanisms may be present, and while they will almost certainly interact with each other, it is helpful to separate them out to recognize the different logics associated with each.

While the final change mechanism—shifting recipients' schemas—is likely the most desired, this analysis and prior research suggest that it typically is not an immediate outcome of issue-selling efforts. Sellers often tie their messages to existing organizational goals or values (Dutton et al. 2001, Bansal 2003), suggesting that recipients' schemas are quite durable and change comes through using them for new purposes rather than fundamentally revising them. Issue selling as resourcing builds on the practice view of issue selling to specify

Figure 2   Model of Issue Selling as Resourcing
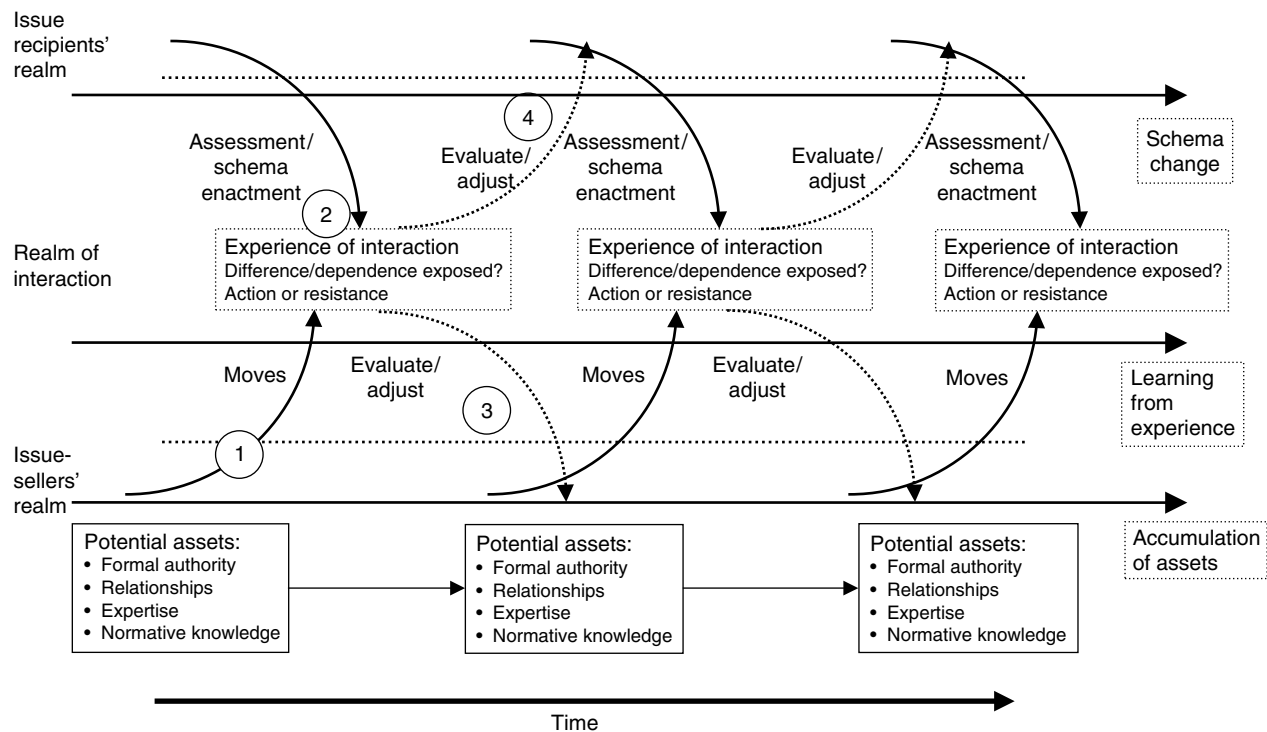
what sellers need to do to bring about change in such circumstances.

A key implication of the analysis and model is that there is no "magic formula" for issue-selling moves. As others have shown, the same moves may be used on successful and unsuccessful efforts (Schilit and Paine 1987, Dutton et al. 2001); a single move or even set of moves is not definitive. By putting the moves into context, this analysis has revealed that patterns of successful and unsuccessful moves are distinguished from each other based on what they *do*, not what they *are*. Effective moves expose relevant differences and dependencies during interaction to trigger recipients' schemas for what constitutes a problem and generate action on the issue.

Attention to differences and dependencies (Carlile 2004) between sellers and recipients brings greater specificity to understanding opportunities for and limitations of issue selling. Successfully representing difference involves introducing new knowledge or requirements, but couching them as subject to familiar evaluative criteria rather than seeking to directly introduce new evaluative criteria. The former asks that the recipients give up less when drawing on their schemas and may explain why issue sellers anchor claims in familiar forms such as the "logic of a business plan" (Dutton et al. 2001). On the other hand, some differences introduced with new issues are less negotiable than others and must be represented adequately to be

treated appropriately (recall the chemical and technical limitations on the Destructor). This reminds us that skillful action in organizations must account for both the material and the discursive (Fairhurst 2005) and places boundaries on the malleability of issues, adding nuance to findings that emphasize the importance of discursive framing to the acceptance of issues in organizational and institutional settings (Creed et al. 2002, Maguire et al. 2004, Sonenshein 2005). Attending to dependence, similarly, brings specificity to what sellers do, because it demonstrates the importance of enacting recipient's schemas for what constitutes a problem; skipping straight to solutions (e.g., through moves of asserting decision processes or taking control) may fail to make dependencies real for recipients. This is in accord with the observation that schemas enacted in setting a problem often connect to those used to envision a solution (Schön 1983) and implies that issue-selling moves should reveal dependencies around problems, not advance solutions directly as previously theorized (Dutton and Ashford 1993).

A second key implication derives from the dynamic, multidimensional, and relational view of power and resistance captured in the analysis and model. Recipients' schemas comprise a critical part of the normative context that issue sellers face, and sellers, almost by definition, are limited in their capacity to enact them. Through repeated interactions, sellers must learn to navigate the context, learning about recipient's schemas, acquiring relevant assets, and experimenting with moves.

Seeing multiple assets and multiple patterns of moves as affording multiple possibilities for influence treats (as successful sellers do) the structuring of power relations in organizations as rich with opportunity as well as constraint. Acquiring an ability to participate in shaping meaning within such settings is a critically important source of power for issue sellers. However, because meaning cannot simply be imposed (Fairhurst 2005) and its acceptance by others depends on the relative assets, skills, and interests of both parties (Østerlund and Carlile 2005), issue sellers build this capacity only through reflecting and skillfully building on prior interactions. This view of issue selling also adds to the work on resourcing by turning attention from how resources and schemas are threatened by new imposed actions (Feldman 2004) to consider how resources and schemas can be harnessed to produce new forms of action.

Finally, attention to the evolution of issue selling over time cautions that resistance to new issues may not be readily apparent, emerging only because recipients' schemas or valued actions are threatened (Feldman 2004), or that resistance may itself be transitory (Phillips 1997). The result is that assets acquired and moves deemed effective during earlier interactions may not remain so. One of the issue sellers at Chipco reflected this knowledge when he observed "sometimes you end up trying to solve yesterday's problems [mentions Destructor] and you don't deal with today's issues which might be quite different." Mastery of issue-selling capability may be only relatively temporary, suggesting that effective issue sellers will continuously learn from experience. Issue selling as resourcing reminds us that sellers control only part of the equation for success. The recipients, the context that surrounds their interactions, and unforeseen events that might influence the ebb and flow of issue salience are also in the equation.

Limitations

There are several limitations to this study. First, it focuses on a single organization and a single issue, and there is a risk that this overemphasizes the importance of particular moves and their effects (e.g., enacting problem schemas in a highly problem-oriented culture). However, the close attention to context afforded by such a study led to findings about the mechanisms of issue selling that are expected to generalize. Differences need not be rooted in technical knowledge, but may arise from the time scales on which groups operate, their creative processes, or the audiences they serve; dependencies need not be rooted in the coordination of work, but may show up in group goals. Consequently, the type of moves deemed effective may differ. Future work could build on this analysis by exploring situated experiences of issue selling in a single organization, but compare across several issues; or exploring how the same set of issues are sold in more than one context. Such work would help

tease out how difference and dependence are revealed and with what effect under different combinations of contexts and issues.

A second limitation is that the analysis may not capture everything that influenced attention to the environmental issues over the time period. Issue selling is likely shaped by external events that can recast the importance of issues for an industry and reshape its practices (Hoffman 1999). In this case, however, there has historically been little sustained public interest in environmental practices of the semiconductor industry. A telephone survey I conducted showed that only Chipco and one other U.S. semiconductor manufacturer had created structures to integrate environmental considerations into process development, suggesting that the actions of EnviroTech were largely "ahead of the curve" and that their issue-selling efforts were likely the primary influences Tech felt on environmental issues during this time period.

Finally, as a group formally created by senior management, EnviroTech is perhaps a unique type of issue seller. Do the findings apply to other forms of issue selling? The managerial sanction at best gave EnviroTech a jump start in its accumulation of assets, emphasizing the importance of seeing issue selling as more pluralistic and ongoing in a change process (Dutton et al. 2001, Bansal 2003). By considering issue selling as a group-level effort, this study has missed potentially important differences in the assets, abilities, and intentions of individuals, and has likely downplayed the role of individual relationships in creating valued resources. Future work could explore differences between group and individual issue sellers, who likely bring different assets to their interactions and may produce valued resources in different ways. A group may be more likely to acquire formal authority and normative knowledge, whereas individuals may build relationships of trust or reputations of expertise.

Conclusion

The value that issue sellers bring to their organizations lies in their knowledge of, and often passion for, a new issue that has potential strategic consequences. The dilemma for issue sellers is how to advance such issues in an organizational context in which the dominant meanings and norms may blind others to the issues, their consequences, and the value in addressing them. The view of issue selling as resourcing developed here accords with earlier work that sees sellers as operating from positions of relative disadvantage within organizations, but skillful at making moves that enable them to bring about change by influencing others' interpretations of issues (Dutton and Ashford 1993, Dutton et al. 2001). It extends this practice perspective on issue selling by identifying what makes issue selling effective in a given

organizational setting, and the mechanisms by which it may change over time. While issue sellers cannot simply impose particular issue interpretations on others or blindly appropriate others' practices to advance their causes, this paper argues that they can and do acquire the ability, by accumulating assets and learning from situated interactions, to participate in the construction of meaning within organizations. Beyond the immediate relevance to the issue-selling literature, the analysis builds on our knowledge of mechanisms of endogenous organizational change (Anderson et al. 2006), microprocesses of strategy making (Johnson et al. 2003), and organizations' actions on issues related to the natural environment.

Acknowledgments

Endnotes

[1]Chipco is a pseudonym.

[2]All group names are pseudonyms.

[3]TechCouncils are decision-making bodies that review data on process development projects related to major process functions, and make and formally ratify decisions for these projects. They also coordinate with other relevant TechCouncils when project decisions influence others' activities or need their approval.

[4]Other projects that involved factory-scale changes to address water and energy consumption, or that were focused on the development of strategic plans or models, were not included in this set.

[5]Several interviewees identified the earliest project for which I had data because the first one that had been undertaken to address environmental aspects of a specific process during development.

[6]For the first, I had only two interviews and could not obtain enough other interviews and archival documents to corroborate the information obtained in the interviews. For the second, I had only a few documents, limited observational data, and no interviews. Because all the other projects I analyzed in depth had a combination of comprehensive interview, archival, and observational data, and typically all three, I felt any analysis of these two projects would not be comparable.

[7]As an early part of my participant role, I developed case studies on successful and unsuccessful projects that had been initiated before my arrival, or were ongoing. I was also involved in a number of other projects and attended monthly half- or full-day meetings of the decision-making body for environmental

process development to follow the programs and projects under consideration and development. Over the course of my time in EnviroTech, I took on a number of new projects opportunistically, which exposed me to the broadest possible range of activities of the group and its interactions with Tech and other groups.

[8]For one of the early (completed) projects, I was unable to interview two non-EnviroTech managers because they had moved to other parts of the organization. For three of the ongoing projects, there were a few engineers and managers I could not schedule interviews with because of (their) time constraints, but in each case, I had observational and archival data, including project updates prepared by these individuals. For each of the six projects examined through interviews, I also spoke with the key EnviroTech project leader.

[9]One of these three managers chaired the EnviroCouncil, adding to the close connections between these groups and the individuals involved in them.

[10]This reporting relationship was largely historical and related to the prior formal roles of the three EnviroTech managers.

[11]The metric here is pounds per wafer start, with a wafer start being the measure of fab throughput. "xxx," "yyy," and "zzz" refer to numbers that are much smaller than one, but are specified to several significant digits.

[12]"Tool" was a standard term to use for process equipment, much of which was very large in scale (up to the size of a large van), complex, and highly automated.

[13]Scrubbers are standard types of pollution control equipment used to remove certain harmful chemicals from an air exhaust stream and capture them in a liquid waste stream.

References

Abbott, A. 1992. What do cases do? Some notes on activity in sociological analysis. C. Ragin, H. Becker, eds. *What is a Case? Exploring Foundations of Social Inquiry*. Cambridge University Press, New York, 53–82.

Anderson, P., R. Blatt, M. Christianson, A. Grant, C. Marquis, E. Neuman, S. Sonenshein, K. Sutcliffe. 2006. Understanding mechanisms in organizational research: Reflections from a collective journey. *J. Management Inquiry* **15** 102–113.

Ashford, S., N. Rothbard, S. Piderit, J. Dutton. 1998. Out on a limb: The role of context and impression management in selling gender issues. *Admin. Sci. Quart.* **43** 23–57.

Bacharach, S., M. Baratz. 1963. Decision and nondecisions: An analytical framework. *Amer. Political Sci. Rev.* **57** 641–651.

Bansal, P. 2003. From issues to actions: The importance of individual concerns and organizational values in responding to natural environment issues. *Organ. Sci.* **14** 510–527.

Barley, S., P. S. Tolbert. 1997. Institutionalization and structuration: Studying the links between action and institution. *Organ. Stud.* **18** 93–117.

Benford, R. D., D. A. Snow. 2000. Framing processes and social movements: An overview and assessment. *Annual Rev. Sociol.* **26** 611–639.

Bourdieu, P. 1977. *Outline of a Theory of Practice*. Cambridge University Press, Cambridge, UK.

Brass, D., M. Burkhardt. 1993. Potential power and power use: An investigation of structure and behavior. *Acad. Management J.* **36**(3) 441–470.

Burgelman, R. 1983. A model of the interaction of strategic behavior, corporate context, and the concept of strategy. *Acad. Management Rev.* **8** 61–70.

Carlile, P. R. 2002. A pragmatic view of knowledge and boundaries: Boundary objects in new product development. *Organ. Sci.* **13** 442–455.

Carlile, P. R. 2004. Transferring, translating, and transforming: An integrative framework for managing knowledge across boundaries. *Organ. Sci.* **15** 555–568.

Carlile, P., E. Rebentisch. 2003. Into the black box: The knowledge transformation cycle. *Management Sci.* **49** 1180–1195.

Clegg, S. R., C. Hardy. 1996. Some dare call it power. S. R. Clegg, C. Hardy, eds. *Handbook of Organization Studies*. Sage Publications, London, UK, 622–641.

Creed, W., M. Scully, J. Austin. 2002. Clothes make the person?: The tailoring of legitimating accounts and the social construction of identity. *Organ. Sci.* **13** 475–496.

Crozier, M. 1964. *The Bureaucratic Phenomenon*. Tavistock, London, UK.

Dahl, R. 1957. The concept of power. *Behavioral Sci.* **2**(3) 201–215.

Dougherty, D. 1992. Interpretive barriers to successful product innovation in large firms. *Organ. Sci.* **3** 179–202.

Dutton, J., S. Ashford. 1993. Selling issues to top management. *Acad. Management Rev.* **18** 397–410.

Dutton, J., S. Jackson. 1987. Categorizing strategic issues: Links to organizational action. *Acad. Management Rev.* **12** 76–90.

Dutton, J., S. Ashford, K. Lawrence, K. Miner-Rubino. 2002. Red light, green light: Making sense of the organizational context for issue selling. *Organ. Sci.* **13** 355–369.

Dutton, J., S. Ashford, R. O'Neill, K. Lawrence. 2001. Moves that matter: Issue selling and organizational change. *Acad. Management J.* **44** 716–736.

Dutton, J., S. Ashford, E. Wierba, R. O'Neill, E. Hayes. 1997. Reading the wind: How middle managers assess the context for issue selling to top managers. *Strategic Management J.* **15** 407–425.

Fairhurst, G. 2005. Reframing *The Art of Framing*: Problems and prospects for leadership. *Leadership* **1**(2) 165–185.

Farmer, S., J. Maslyn, D. Fedor, J. Goodman. 1997. Putting upward influence strategies in context. *J. Organ. Behav.* **18** 17–42.

Feldman, M. S. 2004. Resources in emerging structures and processes of change. *Organ. Sci.* **15**(3) 295–309.

Floyd, S., B. Woolridge. 1992. Middle management involvement in strategy and its association with strategic type: A research note. *Strategic Management J.* **13** 153–167.

Floyd, S., B. Woolridge. 1997. Middle management's strategic influence and organizational performance. *J. Management Stud.* **34**(3) 465–485.

Giddens, A. 1984. *The Constitution of Society: Outline of the Theory of Structure*. University of California Press, Berkeley, CA.

Glaser, B. G., A. L. Strauss. 1967. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Aldine de Gruyter, New York.

Goffman, E. 1981. *Forms of Talk*. University of Pennsylvania Press, Philadelphia, PA.

Golden, B. 1992. The past is the past—Or is it? The use of retrospective accounts as indicators of past strategy. *Acad. Management J.* **35** 848–860.

Hansen, M. T. 1999. The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Admin. Sci. Quart.* **44** 82–111.

Hardy, C. 1994. Power and politics in organizations. C. Hardy, ed. *Managing Strategic Action*. Sage Publications, Thousand Oaks, CA, 220–238.

Hickson, D., C. Hinings, R. Lee, R. Schenck, J. Pennings. 1971. A structural contingencies theory of intraorganizational power. *Admin. Sci. Quart.* **16** 216–229.

Hoffman, A. 1999. Institutional evolution and change: Environmentalism and the U.S. chemical industry. *Acad. Management J.* **42** 351–371.

Howard-Grenville, J. A. 2007. *Corporate Culture and Environmental Practice: Managing Change at a High-Tech Manufacturer*. Edward Elgar, Northampton, MA.

Johnson, G., L. Melin, R. Whittington. 2003. Micro strategy and strategizing: Towards an activity-based view. *J. Management Stud.* **40** 3–22.

Kipnis, D., S. Schmidt, I. Wilkinson. 1980. Intraorganizational influence tactics: Explorations in getting one's way. *J. Appl. Psych.* **65** 440–452.

Lueger, M., K. Sandner, R. Meyer, G. Hammerschmid. 2005. Contextualizing influence activities: An objective hermeneutical approach. *Organ. Stud.* **26**(8) 1145–1168.

Lukes, S. 1974. *Power: A Radical View*. McMillan, London, UK.

Maguire, S., C. Hardy, T. Lawrence. 2004. Institutional entrepreneurship in emerging fields: HIV/AIDS treatment advocacy in Canada. *Acad. Management J.* **47**(5) 657–679.

Miles, M. B., A. M. Huberman. 1994. *Qualitative Data Analysis: An Expanded Sourcebook*, 2nd ed. Sage Publications, Thousand Oaks, CA.

Mowday, R. T. 1978. The exercise of upward influence in organizations. *Admin. Sci. Quart.* **23** 137–156.

Orlikowski, W. J. 2000. Using technology and constituting structures: A practice lens for studying technology in organizations. *Organ. Sci.* **11** 404–428.

Østerlund, C., P. Carlile. 2005. Relations in practice: Sorting through theories on knowledge sharing in complex organizations. *Inform. Soc.* **21** 91–107.

Pentland, B. 1992. Organizing moves in software support hot lines. *Admin. Sci. Quart.* **37**(4) 527–548.

Pfeffer, J., G. Salancik. 1978. *The External Control of Organizations: A Resource Dependence Perspective*. Harper & Row, New York.

Phillips, N. 1997. Bringing the organization back in: A comment on conceptualizations of power in upward influence. *J. Organ. Behav.* **18** 43–47.

Ranson, S., B. Hinings, R. Greenwood. 1980. The structuring of organizational structures. *Admin. Sci. Quart.* **25**(1) 1–14.

Schilit, W. K., E. A. Locke. 1982. A study of upward influence in organizations. *Admin. Sci. Quart.* **27** 304–316.

Schilit, W. K., F. T. Paine. 1987. An examination of the underlying dynamics of strategic decisions subject to upward influence activity. *J. Management Stud.* **24** 161–187.

Schön, D. A. 1983. *The Reflective Practitioner*. Basic Books, New York.

Schutz, A., T. Luckmann. 1973. *The Structures of the Life-World*. Heinemann, London, UK.

Sewell, W. H. J. 1992. A theory of structure: Duality, agency, and transformation. *Amer. J. Sociol.* **98**(1) 1–29.

Sonenshein, S. 2005. Crafting social issues at work. *Acad. Management J.* **49**(6) 1158–1172.

Thompson, J. D. 1967. *Organizations in Action.* McGraw-Hill, New York.

Yukl, G., C. Falbe. 1990. Influence tactics in upward, downward, and lateral influence attempts. *J. Appl. Psych.* **75** 416–423.

Yukl, G., C. Falbe. 1991. The importance of difference sources of power in downward and lateral relations. *J. Appl. Psych.* **76** 416–423.

Yukl, G., H. Kim, C. M. Falbe. 1996. Antecedents of influence outcomes. *J. Appl. Psych.* **81** 309–317.