Preliminary
Comments Welcome

Cyert and March (1963) at Fifty: A Perspective from Organizational Economics

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Coase (1937) launched organizational economics by implicitly asking "If markets are so good, why are there firms?" An enormous literature eventually developed, with work by Hart, Klein, Williamson, and others greatly deepening our understanding of the roles that transaction costs and property rights play in determining the institutional structure of production—that is, the boundaries of firms, as well as the contracts and other governance structures between firms such as joint ventures and networks. As late as 1972, however, Coase famously lamented that his 1937 paper had been "much cited and little used."

Today, organizational economics consists of two halves: the "theory of the firm" (focused on the aforementioned institutional structure of production) and the "theory of internal organization" (focused on the decision processes within organizations that, in certain settings, perform sufficiently well to supplant the market alternative). In this second half of organizational economics, work by Holmstrom, Milgrom, Roberts, Tirole, and others has greatly deepened our understanding of how decision processes determine organizational performance.

I find it productive to ask whether the theory of internal organization has an animating question analogous to Coase's for the theory of the firm (and, if so, who posed it, what else did they say, and what has become of this line of argument)? The answers I propose rest on work by Jim March—especially March (1962), Cyert and March (1963), and March (1966). In particular, I argue that March not only implicitly posed the animating question for the theory of internal organization but also gave some of the fundamental answers that underpin much recent economic research on internal organization.

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** This essay reflects just one person's view of just one part of March's work. Dan Levinthal and Willie Ocasio (and perhaps Ken Arrow, David Kreps, Oliver Williamson, and Sid Winter) will emphasize other aspects.

In my view, one version of the animating question of internal organization complements Coase's question by asking "If environments are imperfect, how will organizations perform?" Another version (better linked to observed organizations, if less well to Coase) is "What makes an organization seem less rational than its members?"

Today, many organizational economists recognize that environments with imperfect alignment of interests and imperfect contracting—including but far from limited to the Prisoners' Dilemma—suggest answers to both of these questions: in such environments, all Nash equilibria may be Pareto-inefficient; in this sense, imperfect environments may cause organizations to perform imperfectly and to seem less rational than their members. What is less widely recognized within organizational economics, however, is that this conception of organizations dates at least to March (1962 [1988]: 110-112), who described "The Business Firm as a Political Coalition" in which "the executive … is a political broker" who cannot "solve the problem of conflict by simple payments to the participants and agreement on a superordinate goal."

And March did not cease this line of research in the early '60s. To the contrary, after two decades of further work by March and other organizations scholars inspired by March's work, Pfeffer (1981: 28) summarized the resulting "political" view of decision making in organizations:

> To understand organizational choices using a political model, it is necessary to understand who participates in decision making, what determines each player's stand on the issues, what determines each actor's relative power, and how the decision process arrives at a decision.

And in the same year, but focusing on the empirical results from the same two decades of research, Feldman and March (1981: 174-5) argued that:

> It is possible, on considering these phenomena, to conclude that organizations are systematically stupid. … [Alternatively,] it is possible to try to discover why reasonably successful and reasonably adaptive organizations might exhibit the kinds of … behaviors that have been reported.

I interpret Pfeffer as describing something like the game-theoretic method that organizational economics now often employs, and I interpret Feldman and March as describing something like the substance of what the internal-organization half of organizational economics now often does: try to understand the observed design and performance of organizations as second-best solutions to transactions plagued by various contractual frictions.[1]

To unpack these ideas (albeit briefly), I begin by looking backward—at some of what March said and how it relates to ideas that are now so central to organizational economics that

[1] See Gibbons, Matouschek, and Roberts (2013) for a survey of such work.

they are often taken for granted. In short, March's work seems (so far) even less appreciated by economists than Coase's was in 1972: one might say that, in organizational economics today, March's work is little cited but much used, if unknowingly.

I then look forward—at some of what could be (and to some extent is being) done that would address further ideas from March (1962), Cyert and March (1963), and March (1966). Given March's focus on decision making in organizations, most of these steps forward would deepen the second half of organizational economics—the theory of internal organization, but other steps forward could connect these ideas to the first half of the field—the theory of the firm, and still others could connect to parts of economics beyond organizational economics.

Looking Backward

Cyert and March (1963 [1992]) began their book with:

> The 'firm' of the theory of the firm has few of the characteristics we have come to identify with actual business firms. It has no complex organization, no problems of control, no standard operating procedures, no budget, no controller, no aspiring 'middle management.' (p. 8)

And they ended it with:

> The arguments in this volume can be summarized by three statements: (1) The business firm is a relevant unit for investigation. (2) It is possible to construct a theory of decision-making behavior within such a unit. (3) Such a theory must focus explicitly on actual organizational decision process. (p. 178)

My guesses are that: any organizational economist working today would take points (1) and (2) for granted; many would also accept the call in point (3) for theory to be disciplined by observation; and some might argue that we have something useful to say about the topics Cyert and March raised—complex organization, problems of control, aspiring middle management, and the like. The point I want to make in this section, however, is not just that organizational economics has begun to address many of these topics: I will argue that we often do so using logics that Cyert and March proposed.

For me, the crucial first step in Cyert and March is that "People (*i.e.*, individuals) have goals; collectivities of people do not" (p. 30). It follows that "Since the existence of unresolved conflict is a conspicuous feature of organizations, it is exceedingly difficult to construct a useful positive theory of organizational decision making if we insist on internal goal consistency" (p. 32-3). Instead, "to describe [the organization] as 'acting', 'behaving', 'choosing', or 'deciding', we are required to introduce some mode of conflict resolution," such as "a process-oriented political theory of conflict resolution … [that] highlights phenomena such as … negotiation,

inconsistency, and more or less continual conflict" (March 1962 [1988]: 104 & 109). In short, as Cyert and March put it, we need to understand "quasi resolution of conflict" (p. 164).

This need to understand quasi-resolution of conflict leads to Cyert and March's view that the principal description of an organization should be "as a decision-making process" (p.202). More specifically:

> Traditionally, organizations are described by organization charts. An organization chart specifies the authority or reportorial structure of the system. … It usually … deals poorly with informal control and informal authority, usually underestimates the significance of personality variables in molding the actual system, and usually exaggerates the isomorphism between the authority system and the communication system. … The kinds of models presented in this book provide another possible alternative descriptive view of an organization. We can describe the organization as a decision-making process. (p. 202)

As just one example of how far Cyert and March progressed with this view, consider the following prescient discussion of strategic information transmission in organizational decision making (pp. 79 & 85):

> Where different parts of the organization have responsibility for different pieces of information relevant to a decision, we would expect some bias in information transmitted due to … attempts to manipulate information as a device for manipulating the decision. … [But] we cannot reasonably introduce the concept of communication bias without introducing its obvious corollary – 'interpretive adjustment'.

I interpret these observations as prefiguring not only some of the classic work in information economics, such as Spence (1973) on signaling and Crawford and Sobel (1982) on cheap-talk model, but also some of the earliest work on organizational decision making, such as Holmstrom (1984) on delegation, Tirole (1986) on collusion, Milgrom and Roberts (1988) on influence activities, and much more.[2]

In sum, reflecting on the same two decades of research as Pfeffer (1981) and Feldman and March (1981) above, March (1981: 217) argued that:

> An emphasis on the political character of organizational decision making is implicitly a focus on the strategic nature of organizational information … . In a conflict system, information is an instrument of consciously strategic actors. … Thus information is itself a game. … [As a result,] information has considerably less value than it might … if strategic considerations were not so pervasive.

Ironically, 1981 was about when economists began to pick up March's story (of politics in decision processes in general and strategic information transmission in particular). Economists

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[2] Again, see Gibbons, Matouschek and Roberts (2013).

have made great progress on these issues in the ensuing decades—often elaborating the agenda initiated by March, whether we know it or not.

Looking Forward

The goal of the previous section was to hint at how Cyert and March used now-familiar considerations regarding strategic information transmission and other contractual frictions to understand organizational decision making (i.e., the behavior of the firm). In this section, I shift the focus to other ideas from Cyert and March, omitted from the previous section, that may currently be less familiar to organizational economists but that nonetheless seem to me likely to bear fruit if incorporated into the research agenda of organizational economics.

For example, note that the previous section offered a selective interpretation of Cyert and March: from *A Behavioral Theory of the Firm* I suggested that one could extract *A Theory of Firm Behavior*, but there was no mention of issues in behavioral economics such as bounded rationality or satisficing. One important path forward (already receiving some attention) is to reject my selective interpretation, focusing instead on what might be called behavioral organizational economics. That is, instead of asking "What makes an organization seem less rational than its members?" one might instead follow Simon (1947)—and, to some extent, March and Simon (1958)—by asking "What makes an organization seem *more* rational than its members?" (*i.e.*, "How can an organization orchestrate the acquisition and communication of information and the allocation of decision-making among its members so as to produce a tolerable outcome when the members are boundedly rational?"). This question relates to Simon's (1978) emphasis on "human cognitive powers and limitations" (p. 9) and his suggestion that economists might benefit by borrowing ideas "from the neighboring disciplines of operations research, artificial intelligence, and cognitive psychology" (p. 15)—fields that focus more on cognitive complexity than on incentive compatibility. In short, some of the behavioral organizational economics I hope to see would have roots both in the Carnegie School and in Marschak and Radner's (1972) team theory, where individuals have costs of acquiring, processing, and communicating information, but all organization members can be seen as sharing the same payoff function, so there are no conflicts of interests. To repeat, some of this is already happening.[3, 4]

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[3] See Garicano and Van Zandt (2013) for a survey on related issues, Camerer and Weber (2013, Sections 5 and 6) and Gibbons and Henderson (2013, Section 6.2) for more specific discussions, Calvó-Armengol, de Martí, and Prat (2011) and Dessein, Galeotti, and Santos (2013) for recent work, and Li (this conference) for an interesting blend of the incentive and team traditions.

[4] I also hope to see growth in the complementary part of behavioral organizational economics that emphasizes preferences rather than cognition. Fairness, reciprocity, and identity are among the big issues in this part of behavioral organizational economics, but I see these issues as less closely connected to Cyert and March so I ignore

A second path forward would delve more deeply into the political issues in Cyert and March, such as regarding coalitions (among other possibilities). Cyert and March argued that

> The firm is, in fact, a coalition of participants with disparate demands, changing foci of attention, and limited ability to attend to all organizational problems simultaneously. (p. 50)

Having begun to raise issues from behavioral economics above, I will illustrate the idea of (limited) attention here by ignoring it, focusing instead on the issue of coalitions. Cyert and March noted that:

> A basic problem in developing a theory of coalition formation is that of handling side payments … [which] are made in many forms: money, personal treatment, authority, organization policy, and so forth. (p. 33)

They went on to observe that:

> Side payments, far from being the incidental distribution of a fixed, transferable booty, represent the central process of goal specification. That is, a significant number of these payments are in the form of policy commitments. … Policy commitments have (one is tempted to say *always*) been an important part of the method by which coalitions are formed. (p. 35)

To my ear, there is an important research agenda here. For example, might a business school dean assemble a working coalition by promising to tilt the school towards, say, finance and accounting? Note that there would then be two issues: first, the commitment would be a promise, not a contract; second, the commitment would be to a policy, not to a payment.[5] For both these reasons, we now see why March (1966) found the Shapley value only limitedly useful as a way to analyze coalitions in organizations: like Nash's Bargaining Solution, the Shapley value assumes that once the parties agree to decisions and transfers, their agreement can be enforced; in current terminology, decisions are assumed to be contractible. But organizations are of interest only if some important decision is *not* contractible, so I follow March in thinking that the Shapley value is unlikely to be the main way we will want to think about coalitions and side payments in organizations.

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them here. See Akerlof and Kranton (2011), Baron and Kreps (2013, Sections 4 and 5), and Camerer and Weber (2013, Section 4) for discussions of work to date.

[5] As with the first agenda sketched above, some work along this line is already happening. There is a large and interesting literature on promises versus contracts: see Malcomson (2013) for a broad survey, Gibbons and Henderson (2013, Section 5.3) for a more specific discussion, and Chassang (2010) and Li and Matouschek (2013) for recent work. There is much less on promises about policies versus about payments, but see Prendergast and Stole (1999) and Andrews and Barron (2013) for a start.

A third path would focus on what managers actually do. Here, too, there is recent progress in organizational economics, especially empirically.[6] The inspiration I take from Cyert and March, however, is narrower and theoretical:

> We have argued that the business firm is basically a coalition without a generally shared, consistent set of goals. Consequently, we cannot assume that a rational manager can treat the organization as a simple instrument in his dealings with the external world. Just as he needs to predict and attempt to manipulate the "external" environment, he must predict and attempt to manipulate his own firm. Indeed, our impression is that most actual managers devote much more time and energy to the problems of managing their coalition than they do to the problems of dealing with the outside world. (p. 205-6)

Distilling these and related ideas from Cyert and March—as well as from Barnard (1938), Penrose (1959), Arrow (1974), and others—I follow Mintzberg (2004) by separating a manager's activities into "analysis" (deciding what to do) and "administration" (getting the organization to do it). Relatedly, organizations scholars have long understood that orders may not be followed (and that a smart manager will be reluctant to give orders that are unlikely to be followed), so it can be difficult for a manager to get the organization to do certain things. Recently, there has been nice theoretical progress in organizational economics along this line.[7] But managers do more than give orders (or decide not to); for example, they might devote "time and energy to the problems of managing their coalition." I eagerly await further enrichments of not only the measurement but also the conception of management within organizational economics.[8]

So far, these three possible paths forward—concerning behavioral organizational economics, policy commitments as side payments in coalitions, and managers devoting time and energy to managing their coalitions—would deepen the theory of internal organization. As a fourth path forward, I shift gears and consider what Cyert and March's ideas about politics in organizations could tell us about the theory of the firm. Since Milgrom and Roberts (1990) and Meyer, Milgrom, and Roberts (1992) we have known that politics (more specifically, in these papers, influence activities) could be a cost of integration that makes non-integration superior to integration. But Williamson (1973: 316) argued that "Substantially the same factors that are ultimately responsible for market failures also explain failures of internal organization." One could therefore analyze how strategic information transmission and other political behaviors can

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[6] As examples of four empirical approaches, see Ichniowski, Shaw, and Prennushi (1997), Bloom and Van Reenen (2007), Bloom, Eifert, Mahajan, McKenzie, and Roberts (2013), and Bandiera, Prat, and Sadun (this conference).

[7] For example, see Landier, Sraer, and Thesmar (2009), Marino, Matsusaka, and Zábojník (2010), Van den Steen (2010a), and Akerlof (2012).

[8] One appealing approach envisions managers changing organization members' beliefs: Hermalin (1998), Caillaud and Tirole (2007), and Van den Steen (2010b) offer usefully different models in this vein. See Hermalin (2013) for a survey on related issues.

affect not only organizational decision making but also the optimal boundary of the firm. That is, might politics within firms have the same roots as haggling between firms (and if so, when is integration superior to non-integration)? As Masten, Meehan, and Snyder (1991) note, the possibility that "substantially the same factors … are ultimately responsible" raises identification issues for virtually the entire empirical literature on the boundary of the firm. As with the above discussion of managers managing their coalitions, however, the point I want to make here is theoretical: we already have a few models that explore such political behaviors within versus between firms, and I hope this vein will be explored further.[9, 10]

Finally, a fifth path forward would extend not only into the other half of organizational economics (*i.e*., beyond the theory of internal organization into the theory of the firm) but also into other parts of the discipline. In particular, returning to the idea of *A Theory of Firm Behavior*, and noting that Chapter 6 of Cyert and March developed a process model of price determination, many questions arise: If we had an accurate model of how firms actually set prices, what would be the implications for industrial organization or macroeconomics? If we had an analogous model of how firms set wages, what would be the implications for labor economics? If we had both models, what would be the implications for trade and development? And how might such models change our thinking about optimal policy concerning antitrust, R&D, intellectual property, climate, trade, and so on? In short, as Winter (1964: 144) put it in reviewing Cyert and March:

> This book delivers a major blow to that battered but hitherto unshaken intellectual construct, the theory of the profit-maximizing firm.

Fifty years later, the profit-maximizing view is still barely shaken, at least in many parts of the discipline, but Winter is clearly right that lots of economics could change if we had to rethink how firms actually behave.

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[9] For example, the cheap-talk models by Alonso, Dessein, and Matouschek (2008) and Rantakari (2008) fit this description by reinterpreting what they call decentralization (i.e., no headquarters) as non-integration. More directly, Powell (2013) builds on the influence-activity models of Milgrom and Roberts (1988) and Gibbons (2005) to compare influence costs within versus between firms.

[10] The property-rights theory of firms' boundaries initiated by Grossman and Hart (1986) fits Williamson's argument that the "same factors … responsible for market failures also explain failures of internal organization" (where, in the property-rights model, these factors are non-contractible ex ante investments), but the conception of internal organization in the property-rights theory differs substantially from the politics, coalitions, and strategic information transmission envisioned by Cyert and March.

References

Akerlof, George, and Rachel Kranton. 2011. *Identity Economics: How Our Identities Shape Our Work, Wages, and Well-Being.* Princeton, NJ: Princeton University Press.

Akerlof, Robert. 2012. "A Theory of Authority." Working Paper, Warwick.

Alonso, Ricardo, Wouter Dessein, and Nilo Matouschek. 2008. "When Does Coordination Require Centralization?" *American Economic Review* 98: 145-79.

Andrews, Isiah, and Daniel Barron. 2013. "The Allocation of Future Business: Dynamic Relational Contracts with Multiple Agents." Working paper, MIT.

Arrow, Kenneth. 1974. *The Limits of Organization.* New York: W. W. Norton.

Bandiera, Oriana, Andrea Prat, and Raffaella Sadun. 2013. "Managerial Capital at the Top: Evidence from the Time Use of CEOs." Working Paper, LSE.

Barnard, Chester. 1938. *The Functions of the Executive.* Cambridge, MA: Harvard University Press.

Baron, James, and David Kreps. 2013. "Employment as an Economic and a Social Relationship." Chapter 8 in R. Gibbons and J. Roberts (eds.), *The Handbook of Organizational Economics*. Princeton, NJ: Princeton University Press.

Bloom, Nicholas, Benn Eifert, Aprajit Mahajan, David McKenzie, and John Roberts. 2013. "Does Management Matter? Evidence from India." *Quarterly Journal of Economics* 128: 1-51.

__________ and John Van Reenen. 2007. "Measuring and Explaining Management Practices across Firms and Countries." *Quarterly Journal of Economics* 122: 1351–1408.

Caillaud, Bernard, and Jean Tirole. 2007. "Consensus Building: How to Persuade a Group." *American Economic Review* 97: 1877–1900.

Calvó-Armengol, Antoni, Joan de Martí, and Andrea Prat. 2011. "Communication and Influence." Working Paper, Pompeu Fabra.

Camerer, Colin, and Roberto Weber. 2013. "Experimental Organizational Economics." Chapter 6 in R. Gibbons and J. Roberts (eds.), *The Handbook of Organizational Economics*. Princeton, NJ: Princeton University Press.

Chassang, Sylvain. 2010. "Building Routines: Learning, Cooperation, and the Dynamics of Incomplete Relational Contracts." *American Economic Review* 100: 448–65.

Coase, Ronald. 1937. "The Nature of the Firm." *Economica* 4: 386-405.

__________. 1972. "Industrial Organization: A Proposal for Research." In V. Fuchs (ed.), *Economic Research: Retrospect and Prospect, Volume 3: Policy Issues and Research Opportunities in Industrial Organization*. Cambridge, MA: NBER.

Crawford, Vincent, and Joel Sobel. 1982. "Strategic Information Transmission." *Econometrica* 50: 1431-51.

Cyert, Richard, and James March. 1963. *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.

Dessein, Wouter, Andrea Galeotti, and Tano Santos. 2013. "Rational Inattention and Organizational Focus." Working Paper, Columbia GSB.

Feldman, Martha, and James G. March. 1981. "Information in Organizations as Signal and Symbol." *Administrative Science Quarterly* 26: 171–86.

Garicano, Luis, and Timothy Van Zandt. 2013. "Hierarchies and the Division of Labor." Chapter 15 in R. Gibbons and J. Roberts (eds.), *The Handbook of Organizational Economics*. Princeton, NJ: Princeton University Press.

Gibbons, Robert. 2005. "Four Formal(izable) Theories of the Firm?" *Journal of Economic Behavior and Organization* 58: 202-47.

__________ and Rebecca Henderson. 2013. "What Do Managers Do? Exploring Persistent Performance Differences Among Seemingly Similar Enterprises." Chapter 17 in R. Gibbons and J. Roberts (eds.), *The Handbook of Organizational Economics*. Princeton, NJ: Princeton University Press.

__________, Niko Matouschek, and John Roberts. 2013. "Decisions in Organizations." Chapter 10 in R. Gibbons and J. Roberts (eds.), *The Handbook of Organizational Economics*. Princeton, NJ: Princeton University Press.

Grossman, Sanford, and Oliver Hart. 1986. "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration." *Journal of Political Economy* 94: 691-719.

Hermalin, Benjamin. 1998. "Toward an Economic Theory of Leadership: Leading by Example." *American Economic Review* 88: 1188-1206.

__________. 2013. "Leadership and Corporate Culture." Chapter 11 in R. Gibbons and J. Roberts (eds.), *The Handbook of Organizational Economics*. Princeton, NJ: Princeton University Press.

Holmstrom, Bengt. 1984. "On the Theory of Delegation." Pages 115-141 in M. Boyer and R. Kihlstrom (eds.), *Bayesian Models in Economic Theory*. New York: North Holland.

Ichniowski, Casey, Kathryn Shaw, and Giovanni Prennushi. 1997. "The Effects of Human Resource Management Practices on Productivity: A Study of Steel Finishing Lines." *American Economic Review* 87: 291–313.

Landier, Augustin, David Sraer, and David Thesmar. 2009. "Optimal Dissent in Organizations." *Review of Economic Studies* 76(2): 761–94.

Li, Hongyi. 2013. "Developing Shared Knowledge." Working Paper, University of New South Wales.

Li, Jin, and Niko Matouschek. 2013. "Managing Conflicts in Relational Contracts." Forthcoming in *American Economic Review*.

March, James. 1962 [1988]. "The Business Firm as a Political Coalition." *Journal of Politics* 24: 662-78. Reprinted as Chapter 5 in J. March (ed.), *Decisions and Organizations*. Oxford, UK: Basil Blackwell.

__________. 1966 [1988]. "The Power of Power." In D. Easton (ed.), *Varieties of Political Theory* (New York: Prentice-Hall). Reprinted as Chapter 6 in J. March (ed.), *Decisions and Organizations*. Oxford, UK: Basil Blackwell.

__________. 1981. "Decisions in Organizations and Theories of Choice," pp. 205-44 in A. Van de Ven and W. Joyce (eds.), *Perspectives on Organization Design and Behavior*. New York, NY: Wiley Interscience.

March, James and Herbert Simon. 1958. *Organizations*. New York, NY: John Wiley & Sons.

Marino, Anthony, John Matsusaka, and Ján Zábojník. 2010. "Disobedience and Authority." *Journal of Law, Economics, and Organization* 26(3): 427-59.

Marschak, Jacob, and Roy Radner. 1972. *Economic Theory of Teams*. New Haven, CT: Yale University Press.

Masten, Scott, James Meehan, and Edward Snyder. 1991. "The Costs of Organization." *Journal of Law, Economics, and Organization* 7: 1-25.

Meyer, Margaret, Paul Milgrom, and John Roberts. 1992. "Organizational Prospects, Influence Costs, and Ownership Changes." *Journal of Economics and Management Strategy* 1: 9-35.

Milgrom, Paul, and John Roberts. 1988. "An Economic Approach to Influence Activities in Organizations." *American Journal of Sociology* 94: S154-S179.

__________ and __________. 1990 "Bargaining costs, influence costs, and the organization of economic activity." Chpater 3 in J. Alt and K. Shepsle (eds.), *Perspectives on Positive Political Economy*. Cambridge, UK: Cambridge University Press.

Mintzberg, Henry. 2004. *Managers not MBAs: A Hard Look at the Soft Practice of Managing and Management Development.* San Francisco: Berrett-Koehler.

Penrose, Edith. 1959. *The Theory and Growth of the Firm.* New York: John Wiley and Sons.

Powell, Michael. 2013. “An Influence-Cost Model of Firm Boundaries and Organizational Practices.” Working paper, Northwestern KSM.

Prendergast, Canice, and Lars Stole. 1999. “Restricting the means of exchange within organizations.” *European Economic Review* 43: 1007-19.

Rantakari, Heikki. 2008. “Governing Adaptation.” *Review of Economic Studies* 75: 1257-85.

Simon, Herbert. 1947. *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organization*. New York, NY: The Free Press.

__________. 1978. “Rationality as Process and as Product of Thought.” *American Economic Review* 68: 1-16.

Spence, Michael. 1973. “Job Market Signaling.” *Quarterly Journal of Economics* 87: 355-74.

Tirole, Jean. 1986. “Hierarchies and Bureaucracies: On the Role of Collusion in Organizations.” *Journal of Law, Economics, and Organization* 2: 181-214.

Van den Steen, Eric. 2010a. “Interpersonal Authority in a Theory of the Firm.” *American Economic Review* 100: 466-90.

__________. 2010b. “On the Origin of Shared Beliefs (and Corporate Culture).’ *Rand Journal of Economics* 41: 617-48.

Williamson, Oliver. 1973. “Markets and Hierarchies: Some Elementary Considerations.” *American Economic Review* 63: 316-25.

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

Winter, Sidney. 1964. “Review of *A Behavioral Theory of the Firm* by Richard M. Cyert and James G. March.” *American Economic Review* 54: 144-48.