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Logics of Organization Theory: Audiences, Codes, and Ecologies.

Michael T. Hannan, László Pólos, and Glenn R. Carroll.
Princeton, NJ: Princeton University Press, 2007.
384 pp. \$29.95, £17.95, paper; \$90.00, £53.00, cloth.

Logics of Organization Theory takes a refreshingly new approach to organization theory. The primary goal is to advance organizational theory by reconstructing and integrating four theory fragments of organizational ecology, but this is done with a novel formal approach to theory building—the organizational findings are served with a thick methodological sauce. This fits well in a long line of appeals to engage more fully in sociological theory building. Homans (1967: 818) suggested that theory is a game and, like other games “must be played according to the rules, and the basic rules are that a player must state real propositions and make real deductions.” The authors not only play the theory game, they also change some of the rules!

The book will appeal to different audiences, making the book itself an interesting case study for the theory developed in it. The broader message of the book, developing a new set of tools that aid theorizing in sociology and the administrative sciences, will appeal to those interested in social science methodology. But first and foremost, it is of interest to researchers working on organization theory in general and on organizational ecology in particular. It goes substantially beyond earlier formalizations of organizational ecology published in the last decade, with a radical shift in focus toward the whole process of theory building.

The introductory chapter, aptly titled “Language Matters,” sets the methodological ground for the book. The inherent ambiguity of natural language (the dominant sociological vernacular) may create significant barriers to theory building in sociology. This makes it hard to go beyond relatively small, isolated theory fragments for which the antecedent meaning of concepts and context can be taken for granted and left implicit. In addition, sociological concepts and arguments have an inherent vagueness that makes them less amenable to strict formalization. The resulting challenge is to develop a formal apparatus that takes some of these vagaries into account. The key motivation of the approach is to deal with two sources of partial knowledge: (1) a fundamental partiality in the concepts we employ in social theories, which tend to have a degree of vagueness—a concept like “university” lacks clear boundaries—and (2) a practical partiality in our theoretical understanding of the social processes—there is little we know with certainty or that we understand in sufficient detail to outlaw other, deeper causal processes. The unique combination of developing new tools in parallel with their application to rework a major organization theory is clearly one of the book’s main strengths.

The first part of the book (chaps. 2–5) forms the heart of the contribution to organizational theory. The basic insight is that the perception of the audience is driving the emergence of organizational categories and forms. This is no free lunch, as the authors warn (p. 33): “Allowing memberships to be fuzzy

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complicates the analysis considerably; but we think that it increases its realism and sociological value." Chapters 2, "Clusters and Labels," and 3, "Types and Categories," cast audience perception as the "labeling" of producers and products by audience segments. Some labels may not stick, but some other labels may catch on, and a sufficient level of consensus is reached by members of the audience on the relevance of these labels and clusters. The agreement results in a class label that becomes an entity of its own right—an abstract concept like "university" is born. An abstract concept transcends the individual examples on which it was based through schematization and develops into an organizational type belonging to an organizational category. In chapters 4, "Forms and Populations," and 5 (with Greta Hsu), "Identity and Audience," the conceptual framework is completed by modeling how organizational categories sink in—the audience will start to take various characteristics or labels for granted—and how this process of legitimation results in organizational forms (and their supporting organizational populations). This leads to a notion of identity in terms of the audience's expectations—the labels the audience takes for granted. This first part builds a whole new foundation for organization ecology. It is perhaps the best part, not in the sense that it provides final answers but rather because it offers new explanations of familiar phenomena and raises a whole range of new questions.

The second part of the book goes back to the methodological track of the book and starts with chapter 6, "A Non-monotonic Logic." It introduces a new defeasible logic that can reason with generic rules. The rules are used to capture causal stories that relate the various concepts in a theory under construction, bringing it close in spirit to the work of Blalock (1971). There are important differences between causality (how it is understood informally) and material implication in logic (i.e., $A \rightarrow B$, which means that it is impossible for antecedent A to hold and the implication B to be false at the same time). For example, reasoning patterns like *Contra-position* and *Modes Tollens* (basically derive from $A \rightarrow B$ that if B is false then A must be false as well) may fail due to the interference of other causes. For example, if your car doesn't start, this doesn't mean you didn't turn the car key properly; there may be other causes, like a dead battery or a potato in your tailpipe. Hence a new causal logic is proposed with the causal stories expressed in new formulas with the form normally A 's are B 's. Because these are entirely new formulas, none of the classic inferences hold, and new machinery has to be developed that derives defeasible conclusions (presumably, A 's are B 's) from the causal stories. The formal detail is, wisely, left out and the logic is introduced by examples. In a nutshell, in case of conflicting outcomes, we favor the most specific argument.¹ The construction of the logic, at a number of points, has an ad hoc feel. This can be seen as an advantage: the logic is tuned to the task at hand and clearly avoids undesirable inferences. But it also avoids desirable inferences: little can be formally proven without making explicit small pieces of background knowledge that make the machinery tick.

Chapter 7, "Integrating Theories of Age Dependence," convincingly shows theory building in action. Starting from

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A formal introduction can be found in a companion paper (Pólos and Hannan, 2004). There are some important differences, such as the crucial definition of "presumably implies" on p. 140: it now requires all positive defeasible arguments (or regularity chains) to be more specific than all the negative ones. Earlier, at least one more specific argument was sufficient, which seems at least more practical.

Stinchcombe's classic liability of newness, one may expect positive age dependence, but empirical studies have revealed negative age dependence patterns. A low mortality of young organizations can be explained by an endowment period, and a high mortality of mature organizations by environmental drift. This results in opposing factors working in different periods of an organization's lifetime. In the formal language, such a minefield of arguments is unproblematic because no conclusion can be drawn unless it's clear what the most specific rule is, and only that one is followed. This greatly facilitates the theorizer in exploring the arguments and postulating appropriate auxiliary assumptions and existential claims to arrive at the desired theoretical outcomes.

The third and fourth parts of the book focus on recasting theory fragments of organizational ecology using the new foundations. Chapter 8, "Niches and Audiences," revisits the concept of ecological niches in terms of their audiences. Distinctions between the fundamental niche and the realized niche, as defined in chapter 9, "Niches and Competition," are maintained. This leads naturally to the theory of niche width, integrated in the new setup. Chapter 10, "Resource Partitioning," is more interesting because it requires some work to integrate niche width theory with the dynamics of resource partitioning theory. The authors opt to work out a consistent interpretation in the new formal setup that explains all the key elements. The resulting formalization partly builds on an underlying mathematical model of resource partitioning. The integration of niche width and the dynamics of resource partitioning in a coherent formal model is an important addition to the earlier theory.

The final substantive part deals with organizational change. Inertia theory is central to organizational ecology: if organizations could freely change forms, they could escape their ecological fates. Chapter 11, "Cascading Change," helps explain why the process of change in itself can endanger the organization. Chapter 12, "Opacity and Asperity," deals with the difficulty of predicting the precise organization changes needed to face particular environmental challenges and the difficulty of controlling the process leading to the desired architectural changes. Chapter 13, "Niche Expansion," further extends the theory by considering niche expansion as organizational change. The organizational change part fits well in the theory as developed so far, although the formal theory is terse and requires a careful reading especially when arguments on the population level and on the level of individual members are mixed. The overall message is a rather pessimistic one: core changes are risky and often (or presumably) unsuccessful. Compared with the generally more optimistic literature on organizational change, this part clears up some of the apparent contradictions—the main remaining difference is one of degree—on the chances of gaining substantially from the results of a successful change (if only successful by luck).

Changing the rules of a game, especially while playing the game, is rather risky—as anyone trying to do this during a board game at home may have learned. This introduces circularity: if the logic is tuned to the existing argumentation

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patterns, then how can we “validate” the argumentation? So how can we determine if the book is successful? The natural success criterion is to assess the progress made in the resulting theory—and the book is a monumental achievement in terms of advancing organization theory. It also does an outstanding job of documenting the method and motivation so that others can use it and help develop it further. Organization theory can only profit if this starts happening.

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