Review by David Krackhardt

Structural Holes: The Social Structure of Competition. Ronald S. Burt. Cambridge, MA: Harvard University Press, 1992. 323 pp. $47.50.

A good theory of organizations builds on existing literature and yet provides new insight into otherwise confusing or contradictory phenomena. It must be falsifiable but should be accompanied by solid empirical support for its predictions. It should be clear and sensible, but also interesting and not trivial. The theory is better if it can be generalized to a large set of phenomena, applying to a range of units of analysis, such as the individual, the organization, and perhaps even larger social entities. If a theory satisfies all of these conditions, then it would also be nice if it stipulated practical implications for organizational members. Such demanding criteria are difficult to meet, and mostly we settle for satisfying a subset of these. Burt's book, *Structural Holes,* may be one of the few books in the field of organizations of the past two decades that truly can claim to have met these standards of excellence.

Burt's theory is based on the idea that actors (be they people, organizations, or markets) are in a better position to profit from their interactions and transactions with others if they are connected to others who are not themselves connected or well organized. The connections to others provide opportunities; the lack of connections among those others are the structural holes. To the extent that there are no holes, then the actor's opportunities are constrained, perhaps to the point of providing little opportunity at all. An actor has achieved "structural autonomy," the bottom line in structural hole theory, to the extent that her position is characterized by two qualities: (1) Her connections (opportunities) are surrounded by structural holes, and (2) the actor herself is not surrounded by structural holes.

Chapter 1 provides an introduction to the structural hole theory that even the most jaded manager could relate to. It is well-written prose with minimal mathematical intrusions. Burt tells stories of entrepreneurs (he uses the term loosely) who take advantage of opportunities and are unencumbered by structural constraints. By the end of chapter, the reader has a good intuition for the structural hole theory. I recommend this chapter and the summaries at the end of each succeeding chapter for anyone who is interested in getting the gist of the theory and findings without wading through the technical detail.

Chapter 2 gives the reader the guts of Burt's theory. This chapter requires multiple passes, but it is worth it, as it reveals the sophistication of the theory beyond the simple metaphors provided in chapter 1. It also provides readers with enough details on operationalization that they could analyze their own data.

Theory is most effectively built from clearly stated assumptions. In this book, there are two classes of such assumptions: what I might term macro-assumptions and micro-assumptions. The macro-assumptions are major assumptions that drive the entire logic of the theory. They embed the structural holes theory in the prior literature. For example, the "entrepreneurial" assumption can be credited to Lin Freeman's (1979) work on betweenness centrality: Power accrues to those who are between two others. The micro-assumptions are ones that Burt makes at the operationalization level of his analysis. For example, he assumes that opportunity with a particular target degrades as one is connected to more targets (resources, etc.). It is as if one has a fixed amount of opportunity energy, and the more one spreads this around, the less opportunity one has with each target. It is not that this micro-assumption is indefensible. Rather, it seems not critical to the major argument and could be relaxed without doing an injustice to the theory as a whole.

On occasion, Burt exposes and explores alternatives to these micro-assumptions. For example, he demonstrates vividly (pp. 57–62) how a seemingly minor change in the definition of constraint from that based on proportional ties (normalized by total number of ties) to marginal ties (normalized by the single largest tie strength) can dramatically affect the three-way interaction among constraint, the number of contacts in the network, and the overall density of the network. But on other occasions these micro-assumptions are left to the reader to infer and play with. For example, part of the reason structural holes are good is because they reduce redundancy, a bad thing in Burt's model, based on Granovetter's (1973) weak-tie argument. Burt's measure of redundancy actor *i* gets from actor *j* is the sum of the product of two terms: (1) the proportional tie strength actor *i* has with others and (2) the marginal tie strength actor *j* has with those same others. Why use marginal strength here to measure redundancy? Does this micro-assumption make any difference, as it does with constraint? This is why a sound reading of chapter 2 is important to the rest of the book. First, it informs the reader of these (occasionally subtle) micro-assumptions so that the reader can replicate Burt's research. Second, perhaps more important, a good understanding of these micro-assumptions frees the reader to take liberties and explore the model without being tied to specific operationalizational details that are not critical to the underlying theory (e.g., Krackhardt, 1995).

Chapters 3 and 4 demonstrate the power of the model empirically. Chapter 3 contains an analysis of industries (such as the iron mining, food, and real estate industries) and shows that markets that are characterized by structural autonomy extract higher profits than markets characterized by lower structural autonomy. One can easily see the influence of Pfeffer and Salancik's (1978) model of resource dependence throughout the book, but it is particularly strong in this section. Economists exploring such markets would focus on the monopolistic tendency (concentration ratios, barriers to entry) as a major determinant of profitability. Burt makes good use of concentration ratios in his analysis, but he shows that that is not the whole story. Rather, he demonstrates that the structural holes in transactions outside the market group, among suppliers and customers, will prompt higher profit margins.

In chapter 4, Burt focuses on the careers of managers as the dependent variable. He shows that managers' promotions will come faster to the extent that the managers are connected to people with many structural holes. He notes that, while on the whole his predictions were supported in this data set, women and entry-rank men appeared not to conform to the model. In fact, analyses of these groups show just the opposite: Building ties that are surrounded with structural holes impedes their promotional opportunities. He explores this finding in some depth and suggests that these people's lack of legitimacy requires that they temporarily take on strategic partners who have good structural positions rather than try to occupy these positions themselves. His candor and thoroughness are impressive.

It is worth noting the distinctive methodology used in chapter 4. Burt collected data in a method similar to that used in 1985 in the General Social Survey, a method he is largely responsible for developing (Burt, 1984). In the survey instrument, Burt asked the managers to report on not only their own relations but also on the relations among the set of others to whom they claim they are connected. This method has a distinct advantage over traditional network data collection procedures, which usually require collecting data over an entire, and necessarily restricted population. Burt's method provides a sampling strategy and, with it, an ability to collect data over a much larger population. But this approach has two inherent limitations. First, it assumes that the respondent can and will reasonably accurately report such information, a difficult task at best (Krackhardt, 1990). Second, it does not allow the researcher to explore the structure beyond the ego network of the respondent. Thus, in this case, Burt could not directly test whether the strategic sponsors to whom successful women and entry-level men were tied enjoyed structural advantages. Given the tradeoffs here, Burt makes the decision to go with a broader sample and sacrifice the quality of network information. The fact that his results are as predictive as they are, given these data limitations, is testimony to the power of the structural holes model.

Chapter 5 is a short excursus entitled "Player-structure Duality." Burt suggests that each actor in a structure contains information (if biased and incomplete) about the structure as a whole, much as pieces of a hologram each can replicate the entire hologram picture. Thus, he claims, the distinction in units of analysis between larger and smaller units is a false one. Scholars interested in meso organizational behavior would be particularly intrigued by this chapter.

In chapters 6 and 7, Burt practices what he preaches. He is attempting here to build bridges to groups that do not ordinarily talk to each other in the literature—i.e., a set of literatures that is surrounded by structural holes. He shows that personality theory (e.g., Freud), a theory of the firm (e.g., Coase and Williamson), a theory of population ecology (e.g., Hannan and colleagues), and a theory of markets (e.g., Harrison White) all can be extended using structural hole theory. The weakest of these bridges is to personality theory, wherein he predicts that such variables as intelligence, leadership skills, and locus of control might be associated with structural autonomy. The causal link is ambiguous here, sometimes suggesting that personal attributes and behaviors would result from an actor's position, sometimes suggesting that a person's attribute (such as intelligence and leadership skill) would lead him or her to occupy a favored structural position.

While I found all four bridges quite fruitful, I will draw attention to the one that has had the most influence recently in organizational theory, the extension of population ecology. In this section (pp. 208–225), Burt carefully goes through the parallels and differences between the organizational ecology models and network analysis. He draws on the similarity between the population ecology concept of niche and the networker's definition of structural equivalence, which he used to identify markets in chapter 3. Most importantly, he points to the tendency among population ecologists to predict birth and death rates within one population at a time over time, assuming that competition is the driving force in this phenomenon. Burt notes that another approach could be to explore the (structural hole) conditions that generate more or less competition in the first place. Rather than looking only at survival rates within populations, Burt demonstrates with an empirical example how the population ecology model could be explored by looking at survival rates across populations (market niches).

A subtle question throughout the book is: If being in the structurally autonomous position holds such advantages, why don't people just change their position by forging new, entrepreneurial relationships? Sometimes the answer seems to be that they cannot; they are victims of their positions and that is that. But other times, Burt seems to indicate that they not only can but will do exactly that. This is most explicit in chapter 7, in which he develops a "strategy hypothesis," suggesting that people in disadvantageous positions will work to remove themselves from the constraints inherent therein. The problem with this hypothesis is that if it is true, then in the long run we should not see any variance in constraints, and the basic structural holes advantages should disappear. At a minimum, this paradox provides future scholars with a new set of research questions to explore.

Network research is frequently characterized as an amalgam of mathematical (read boring) techniques and atheoretical data crunching. This popular perspective, if it ever had merit, is demolished in Burt's book. The book is destined to become one of the most influential and important contributions that the network paradigm has made to organizational theory.

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