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Heterarchy: Asset Ambiguity, Organizational Innovation, and the Postsocialist Firm

Abstract

[Excerpt] Each evening during their hunting season, the Naskapi Indians of the Labrador Peninsula determined where they would look for game on the next day's hunt by holding a caribou shoulder bone over the fire.¹ Examining the smoke deposits on the caribou bone, a shaman read for the hunting party the points of orientation of tomorrow's search. In this way, the Naskapi introduced a randomizing element to confound a short term rationality in which the one best way to find game would have been to look again tomorrow where they had found game today. By following the daily divergent map of smoke on the caribou bone, they avoided locking in to early successes that, while taking them to game in the short run, would have depleted the caribou stock in that quadrant and reduced the likelihood of successful hunting in the long run. By breaking the link between future courses and past successes, the tradition of shoulder bone reading was an antidote to path dependence in the hunt.

Keywords

university, economic, institution, heterarchy, asset, firm, innovation, privatization, diversity

Comments

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Heterarchy: Asset Ambiguity, Organizational Innovation, and the Postsocialist Firm

David Stark

Working Paper 96-21



**Heterarchy:
Asset Ambiguity, Organizational Innovation,
and the Postsocialist Firm**

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This paper has not undergone formal review or approval of the faculty of the ILR School. It is intended to make results of research, conferences, and projects available to others interested in human resource management in preliminary form to encourage discussion and suggestions.

Introduction: Lessons from Labrador

Each evening during their hunting season, the Naskapi Indians of the Labrador Peninsula determined where they would look for game on the next day's hunt by holding a caribou shoulder bone over the fire.¹ Examining the smoke deposits on the caribou bone, a shaman read for the hunting party the points of orientation of tomorrow's search. In this way, the Naskapi introduced a randomizing element to confound a short term rationality in which the one best way to find game would have been to look again tomorrow where they had found game today. By following the daily divergent map of smoke on the caribou bone, they avoided locking in to early successes that, while taking them to game in the short run, would have depleted the caribou stock in that quadrant and reduced the likelihood of successful hunting in the long run. By breaking the link between future courses and past successes, the tradition of shoulder bone reading was an antidote to path dependence in the hunt.

Mainstream notions of the postsocialist "transition" as the replacement of one set of economic institutions by another set of institutions of proven efficiency are plagued by similar problems of short term rationality that the Naskapi traditional practices mitigate. As the economist's variant of "hunt tomorrow where we found game today," neoliberals recommend the adoption of a highly stylized version of the institutions of prices and property that have "worked well in the West." Economic efficiency will be maximized only through the rapid and all-encompassing implementation of privatization and marketization. I argue here, by contrast, that although such institutional homogenization might foster adaptation in the short run, the consequent loss of institutional diversity will impede adaptability in the long run. Limiting the search for effective institutions and organizational forms to the familiar Western quadrant of tried and proven arrangements locks in the postsocialist economies to exploiting known territory at the cost of forgetting (or never learning) the skills of exploring for new solutions.

With my Naskapi example I do not mean to suggest that policy makers in contemporary Eastern Europe should select institutions with a roll of the dice. Instead, the lesson from Labrador is that institutional legacies that retard the quick pursuit of immediate successes can be important for keeping open alternative courses of action. Institutional friction preserves diversity; it sustains organizational routines that might later be recombined in new organizational forms. Resistance to change, in this sense, can foster change. Institutional legacies embody not only the persistence of the past but also resources for the future. Institutional friction that blocks transition to an already designated future keeps open a multiplicity of alternative paths to further exploration.

Our neoliberal colleagues would be quick to argue that such exploration is costly, inefficient, and unnecessary. In their view, the alternative, evolutionary course of search seems an indulgent squandering of resources, avoidable by exploiting institutions with proven returns. Given limited resources, the economies of Eastern Europe would do better to be quick to the chase, to learn from the leaders instead of the lessons of Labrador.

Recent studies in evolutionary economics and organizational analysis suggest, by contrast, that organizations that learn too quickly sacrifice efficiency. Allen and McGlade (1987), for example, use the behavior of Nova Scotia fishermen to illustrate the possible trade offs of exploiting old certainties and exploring new possibilities. Their model of these fishing fleets divides the fishermen into two classes: the rationalist "Cartesians" who drop their nets only where the fish are known to be biting and the risk-taking "Stochasts" who discover the new schools of fish. In simulations where all the skippers are Stochasts the fleet is relatively unproductive -- for knowledge of where the fish are biting is unutilized; but a purely Cartesian fleet locks in to the "most likely" spot and quickly fishes it out. More efficient are the models that most closely mimic the actual behavior of the Nova Scotia fishing fleets with their mix of Cartesian exploiters and Stochastic explorers.

James March's simulation in "Exploitation and Exploration in Organizational Learning" (1991) yields similar results when he finds that interacting collections of smart learners frequently underperform interactions of smart and dumb.² Organizations that learn too quickly exploit at the expense of exploration thereby locking in to suboptimal routines and strategies. The purely Cartesian fleet in Allen and McGlade's study, like the organizations of homogeneously smart learners in March's simulations, illustrate the potential dangers of positive feedback and the pitfalls of tight coupling. Like infantry officers who instructed drummers to deliberately disrupt cadence while crossing bridges lest the resonance of uniformly marching soldiers bring calamity, I draw the lesson that dissonance contributes to organizational learning and economic evolution.

¹ This account is drawn from Weick (1977, p. 45).

² As John Padgett summarizes March's findings: "(A) Fast learners overspecialize into competency traps. Slow learners preserve collective wisdom. (B) Smart learners respond quickly to noise as well as to true data. They reinforce self-confidence in collective delusions. (C) Homogeneity in "smart" worldview limits the genetic variability necessary for future exploration. (D) Personnel turnover of dumb for smart is good up to a point, as long as others in the organization learn about whom to attend to when." (Padgett, 1992:746)

Friction

In the opening pages of The Economic Institutions of Capitalism, Oliver Williamson (1985, p. 18-9) observes that

Transaction costs are the economic equivalent of friction in physical systems But whereas physicists were quickly reminded by their laboratory instruments and the world around them that friction was pervasive and often needed to be taken expressly into account, economists did not have a corresponding appreciation for the costs of running the economic system. Thus, although positive economics admitted that frictions were important in principle, it had no language to describe frictions in fact.

Williamson's contribution to economics has been to develop an analytic strategy to understand "friction" in economic transactions -- with the aim of guiding policies and promoting institutions that minimize these transaction costs. The concept of institutional friction seems applicable to the transforming postsocialist economies -- but in ways that depart markedly from Williamson's project. First, we shift from Williamson's concerns with the friction of economic exchanges to the friction of economic restructuring. That is, whereas Williamson focuses our attention on transaction costs, we are concerned here with transformation costs. In fact, to the extent that institutionalization is a kind of "investment in forms" (Thevenot 1984), reducing the costs of future transactions, such transformation costs might be conceptualized as sunk transaction costs. Second, unlike the Williamsonian tendency to assess as superior those forms that minimize friction, I see a positive role for institutional friction. The point here is not to advocate higher transformation costs or to promote institutions with steep transaction costs but to question the notion of a "smooth" or frictionless "transition" so prominent in the economic literature on postsocialism.

This alternative position begins from the insight that *some friction may be essential for the functioning of markets* by undermining positive feedback loops that can lead to lock-in. Such was the lesson drawn by the federal Securities and Exchange Commission in the aftermath of the 508point crash of the New York Stock Exchange on October 19, 1987. As trading in some fields was approaching an almost frictionless character with advances in "program trading" -- computerized, high speed trading of baskets of stock by major investors with simultaneous and nearly identical information -- the Securities and Exchange commissioners saw a danger that some markets could pass from volatility to chaos. To maintain orderly markets, the commissioners designed a set of "collars" that trigger temporary halts in computerized index arbitrage when the Dow skips more than a certain number of points in either direction. Like the

Naskapi caribou shoulder bone that disrupts the negative effects of positive feedback, these so-called circuit breakers bring time, and hence friction, back into the Exchange.³

The idea here is that a frictionless market (with zero transaction costs) would be no market at all. Although this particular formulation is perhaps novel, the basic notion would be of no surprise to economic sociologists -- for one of the most important contributions of the new field has been to demonstrate that organizational logics other than market rationality are necessary conditions for market relations.⁴ Extending this fundamental insight to the postsocialist transformations suggests the following: If some fiction (some non-zero transaction costs) facilitate market transactions, perhaps institutional friction that retards too quick adjustment of firms in the postsocialist setting can actually contribute to economic restructuring leading to better performance. Pursuing this line of thinking leads us to challenge the conventional thinking about the "legacies of the old order" within an emerging East European capitalism.

Fitness

In the neoliberal prescription for the postsocialist transition, the persistence of organizational forms and social relationships of the old state-socialist system signals an incomplete change, a manifest symptom of a half-hearted implementation of the envisaged new social order. Accordingly, legacies indicate institutional pathologies contaminated with the deficiencies of the old regime obstructing the process of transformation: The fixture cannot be realized because the past cannot be overcome. The legacies of state-socialism block the promising road to free markets.

Free markets, the prominent advocates of neoclassical economics incessantly repeat, are a synonym for efficiency. Notoriously suppressed during state-socialism, competition in free markets guarantees that more efficient organizational forms will survive and that inefficient ones perish. In the relentless struggle for survival only the fittest endure.

The alternative view draws on a different conception of "fitness." As evolutionary theorists in the biological sciences emphasize (Smith 1984; Gould and Lewontin 1984; essays in Dupre 1987) and as organizational ecologists in the social sciences stress (Hannan 1986; Carroll and Harrison 1994; Barnett 1995), fitness is not an absolute and invariant quantity.

³ See Robb (1990) for an account of the Commission's decision. Heberlein (1995) and Petruno (1994) assess the impact on the New York Stock Exchange. The NYSE "collars" were recently triggered during the sharp downturn in mid July 1996. See the Business Pages of the New York Times, July [15th].

Rather, fitness depends on the environment, and the environment may change during the course of the selection process. Thus, even if the selected characteristics of an organizational form were the "fittest," they would be so only in regard to a particular, economic, political, and cultural context; they would not be the fittest for a changing or a different context. In fact, the very fitness of an organizational form might, through various mechanisms, induce environmental changes that undermine their efficiency. It follows that organizational forms that are most fit for the "transition" are quite likely to be suboptimal in the subsequently changed environment. Stated differently in the language of the new economic history (Katz and Shapiro 1985; Arthur 1994; David 1986) the very mechanisms that foster allocative efficiency might eventually lock in economic development to a path that is inefficient viewed dynamically. The mechanisms that are conducive for the synchronic adaptation of the economic to a specific environment may, at the same time, undermine an economy's diachronic adaptability.⁵

Within this alternative framework, we thus shift from the problem of how to improve the immediate "fit" into a new economic environment to the problem of how to reorganize the institutional and organization structure of these economies to enhance their ability to respond to unpredictable future changes in the environment. In place of the search for the "best" institutions to manage the transition, we would do better to reorient our analysis to identifying the types of organizational configurations that are better at search. It follows that instead of examining organizational forms in Eastern Europe according to the degree to which they conform to or depart from the ideal types of organizing production in Western style capitalism, our focus shifts to examine variations and mutations resulting from the recombination of the inherited forms with emerging new ones. Instead of simply conceiving these recombinations as accidental aberrations, we explore their evolutionary potentials.

⁴ See, for example, the revival of a Durkheimian emphasis on obligation in Wolfgang Streeck's (1996) concept of "beneficial fairs" (or Ronald Dore's similar construct of "flexible rigidities") and the sociological new institutionalism represented in the papers edited by Powell and DiMaggio (1991).

⁵ The trade-off between allocative and dynamic efficiency constitutes a fundamental tension in the current transformation in Eastern Europe. Murrell (1991) argues from empirical data that state socialism was no less efficient in allocating resources than capitalist societies. Where it lagged was in dynamic efficiency, in its capacity to promote innovation. This imbalance has survived state socialism: Current reform efforts seem preoccupied with removing institutional legacies for the sake of improving allocative efficiency. But a purging of organizational legacies to gain allocative efficiency can come at the cost of undermining dynamic efficiency just as a narrow adaptation to a specific economic environment can jeopardize the economy's adaptability (Granovetter, 1979, p. 498; Hannan, 1986).

Diversity

Within the population thinking characteristic of organizational ecology, the problem of adaptability (whether at the level of an industry or of a national economy) is a problem of the diversity of organizations. As Michael Hannan argues,

Having a range of alternative ways to produce certain goods and services is valuable whenever the fixture is uncertain. A society that retains only a few organizational forms may thrive for a time. But once the environment changes, such a society faces serious problems until existing organizations can be reshaped or new ones created. Since reorganization is costly and may not work at all for the reasons stated above (and because new organizations are fragile), it may take a long time to adapt to the new conditions. A system with greater organizational diversity has a higher probability of having in hand some solution that is satisfactory under changed environmental conditions (Hannan, 1986, p. 85).

Hannan's observation has obvious applicability to the postsocialist setting where we find extraordinary uncertainties about the future. From this view, the "socialist legacies," even the "entrenched interests" that fight to preserve the status quo, are not uniformly regressive features in the new order. By retarding too quick convergence, they might preserve organizational diversity, keeping various organizational routines available for further recombinatory strategies.

My analysis draws on this line of organizational ecology. But it departs from it as well in suggesting that we should examine not only the diversity of organizations but also the organization of diversity. Stated all too briefly, what I have in mind here is that it is not enough for a given population of organizations to be diverse, or even that different organizational forms compete (for market share or other institutional resources) in the same niche, but that organizational diversity is most likely to yield its fullest evolutionary potential when different organizational principles co-exist in an active rivalry within the same domain space. By organizational rivalry, I mean an active and sustained engagement in which there is more than one way (and more than one principle to legitimate) the same or similar activity. Rivalry fosters cross-fertilization.⁶ Following this line of reasoning (in Harrison White's terminology, "values mate to change") suggests that in addition to research on the diversity of organizations within a population we must also analyze the organization of diversity within an enterprise. Organizational rivalry is organized redundancy.⁷ It increases the possibilities of long term adaptability by better search -- "better" not because it is more consistent or elegant or coherent

⁶ Stated simply (and thus at the risk of misunderstanding, if not caricature), despite all its (appropriately cautious and always distanced) adoption of biological metaphors, organizational ecology lacks sex. That is, it is relatively infrequent in the population ecology of organizations that we find cross-fertilization, mixing, or recombinations of "genetic" organizational materials.

⁷ See esp. Grabher (1994) for a fascinating discussion of how rivalry of coexisting organizational forms contributes to adaptability. For related views on adaptability and complexity, see Landau (1969), Morin (1974), and Conrad (1983).

but precisely because the ambiguity that it promotes and the lack of simple coherence that it tolerates increase the diversity of options. Rivalry promotes organizational reflexivity, the ability to redefine and recombine resources. Organizations that have such properties, I label "heterarchies." It is to their postsocialist variant that I turn.

Recombinant Processes

My research in Hungary has focused on processes that are conventionally addressed under the rubric of "privatization."⁸ The principal finding of that research is that a great deal of property transformation is taking place in Hungary but that much of it does not conform to privatization either in the sense of a straightforward transfer of property from public to private hands or of a clarification of property rights.⁹ As we shall see, the emerging new property forms in Hungary blur 1) the boundaries of public and private, 2) the organizational boundaries of enterprises, and 3) the boundedness of justificatory principles. To denote these processes of triple boundary blurring, I adopt the term recombinant property.

Recombinant property is a form of organizational hedging, or portfolio management, in which actors respond to uncertainty in the organizational environment by diversifying their assets, redefining and recombining resources. It is an attempt to hold resources that can be justified or assessed by more than one standard of evaluation. Recombinant property takes various forms in the Hungarian economy, three of which I discuss here.

Inter-enterprise ownership. To cope with the uncertainties of volatile change in their economic environments and to respond to the state's injunction that state-owned enterprises must be privatized, many large Hungarian firms have adopted strategies of institutional cross-ownership. That is, they acquired shares in other firms and they made arrangements for other enterprises to become their new shareholders. To assess the prevalence of such inter-enterprise ownership, I compiled a data set on the ownership structure of the largest 200 Hungarian corporations (ranked by sales).¹⁰ These firms compose the "Top 200" of the 1993 listing of Figyelo, a leading Hungarian business weekly. Like their Fortune 500 counterparts in the United

⁸ The following section is drawn from Stark 1996:1002-08.

⁹ Based on his analysis of recent developments in China, Walder (1994) argues that clarification of property rights and not privatization per se is the key issue. Demonstrating in the Hungarian case that property transformation can occur without conventional privatization, my research confirms Walder's central insight that property reform should not be equated with privatization. The difference in the Hungarian case is that property transformation does not necessarily clarify property rights.

¹⁰ Such data collection is not a simple matter where capital markets are poorly developed. There is no Hungarian Moodv's and certainly no corporate directory equivalent to Industrial Groupings in Japan or Keiretsu no Kenyu (see, for example, Gerlach and Lincoln 1992). The labor-intensive solution has been to gather that data directly from the Hungarian Courts of Registry.

States, the Figyelo 200 firms are major players in the Hungarian economy employing an estimated 21 percent of the labor force and accounting for 37 percent of total net sales and 42 percent of export revenues (Figyelo, 1993). The data also include the top 25 Hungarian banks (ranked by assets). Ownership data were obtained directly from the Hungarian Courts of Registry where corporate files contain not only information on the company's officers and board of directors but also a complete list of the company's owners as of the 1993 annual shareholders' meeting. The data analyzed here are limited to the top twenty shareholders of each corporation.¹¹ In the Budapest Court of Registry and the 19 County Registries we were able to locate ownership files for 195 of the 200 corporations and for all of the 25 banks, referred to below as the "Top 220" firms.

Who holds the shares of these 220 largest enterprises and banks? We found some form of state ownership - with shares held by the AV-Rt (the State Holding Corporation), the SPA (the State Property Agency), or the institutions of local government (who had typically exchanged their real estate holdings for enterprise shares) -- present in the overwhelming majority (71 percent) of these enterprises and banks. More surprisingly, given the relatively short time since the "system change" in 1989-90, we found 36 companies (i.e., more than 16 percent of this population) in majority foreign ownership. Hungarian private individuals (summed down the top 20 owners) hold at least 25 percent of the shares of only 12 of these largest enterprises and banks.

Most interesting from the perspective of the argument here is the finding of 87 cases in which another Hungarian company is among the twenty largest shareholders. In 42 of these cases the other Hungarian companies together hold a clear majority (50% plus one share). Thus, by the most restrictive definition, almost twenty percent of our Top 220 companies are unambiguous cases of inter-enterprise ownership; and we find some degree of inter-enterprise ownership in almost forty percent of these large companies.

Figure 1 presents two discrete networks formed through such inter-enterprise ownership. The relations depicted in the figure, it should be emphasized, are the direct horizontal ties among the very largest enterprises -- the superhighways, so to speak, of Hungarian corporate networks.¹² From these corporate thoroughfares linking the large enterprises we now turn to

¹¹ This twenty-owner limitation is a convention adopted in research on inter-corporate ownership in East Asia (Gerlach and Lincoln 1992; Hoshi 1994). In the Hungarian economy where only 37 firms are traded on the Budapest stock exchange and where corporate shareholding is not widely dispersed among hundreds of small investors, the twenty owner restriction allows us to account for at least 90 percent of the shares held in virtually every company.

¹² During the Spring of 1996, Szabolcs Kemeny (Ph.D. candidate, Sociology, Cornell) and I replicated the 1993 study by collecting data on the ownership structure (and members of the Board of Directors, also included in the 1993 study) of the

examine the local byways linking spin-off properties within the gravitational field of large enterprises.

Corporate satellites. Our attention thus focuses on limited liability companies (*korlatotl feleosegu tarsasag* or KFT) the corporate form that experienced the most dramatic growth during the postsocialist period, increasing from only 450 at the end of 1988 to almost 80,000 by the end of 1994. Some of these KFTs are genuinely private entrepreneurial ventures. But many of these limited liability companies are not entirely distinct from the transformed shareholding companies examined above. In fact, the formerly socialist enterprises have been active founders and continue as current co-owners of the newly incorporated units. This pattern is exemplified by the case of one of Hungary's largest metallurgy firms represented in Figure 2. As we see in that figure, "Heavy Metal," an enormous shareholding company in the portfolio of the State Holding Corporation, is the majority shareholder of 26 of its 40 corporate satellites.

Like Saturn's rings, Heavy Metal's satellites revolve around the giant corporate planet in concentric orbits.¹³ Near the center are the core metallurgy units, hot-rolling mills, energy, maintenance, and strategic planning units held in a kind of geo-synchronous orbit by 100 percent ownership. In the next ring, where the corporate headquarters holds roughly 50-99 percent of the shares, are the cold-rolling mills, wire and cable production, oxygen facility, galvanizing and other finishing treatments, specialized castings, quality control and marketing units. As this listing suggests, these satellites are linked to each other and to the core units by ties of technological dependence. Relations between the middle-ring satellites and the company center are marked by the center's recurrent efforts to introduce stricter accounting procedures and tighter financial controls. These attempts are countered by the units' efforts to increase their autonomy -- coordinated through personal ties and formalized in the biweekly meetings of the "Club of KFT Managing Directors."

The satellites of the outer ring are even more heterogeneous in their production profiles (construction, industrial services, computing, ceramics, machining) and are usually of lower levels of capitalization. Units of this outer ring are less fixed in Heavy Metal's gravitational field: some have recently entered and some seem about to leave. Among the new entrants are some of Heavy Metal's domestic customers. Unable to collect receivables, Heavy Metal exchanged inter-enterprise debt for equity in its clients, preferring that these meteors be swept into an orbit

new Figyelo Top 200 (including firms from the earlier list that might have fallen out of the 1996 Top 200). We hope soon to report the findings from our block model analysis assessing the stability of these ties over time.

¹³ "Heavy Metal" is one of six Hungarian enterprises in which I conducted field research in 1993-94 in collaboration with Laszlo Neumann.

rather than be lost in liquidation. Among those satellites launched from the old state enterprise are some for which Heavy Metal augments its less than majority ownership with leasing arrangements to keep centrifugal forces in check.

The corporate satellites among the limited liability companies are, thus, far from unambiguously "private" ventures; yet neither are they unmistakably "statist" residues of the socialist past. Property shares in most corporate satellites are not limited to the founding enterprise. Top- and mid-level managers, professionals, and other staff can be found on the lists of founding partners and current owners. Such private persons rarely acquire complete ownership of the corporate satellite, preferring to use their insider knowledge to exploit the ambiguities of institutional co-ownership. The corporate satellites are thus partially a result of the hedging and risk-sharing strategies of individual managers. We might ask why a given manager would not want to acquire 100 percent ownership in order to obtain 100 of the profit, but from the perspective of a given manager the calculus instead is "Why acquire 100 percent of the risk if some can be shared with the corporate center?" With ambiguous interests and divided loyalties, these risk-sharing (or risk-shedding) owner/managers are organizationally hedging.¹⁴ As these managers are joined by ownership stakes on the part of other limited liability companies spinning around yet other large enterprises, we see that this new property form thus find horizontal ties of cross-ownership intertwined with vertical ties of nested holdings.

Recombinets. The recombinant character of Hungarian property is a function not only of the direct (horizontal) ownership ties among the largest firms and of their direct (vertical) ties to their corporate satellites but also of the network properties of the full ensemble of direct and indirect ties linking entities, irrespective of their attributes (large, small, or of various legal forms) in a given configuration. The available data do not allow us to present a comprehensive map of these complex relations. Records in the Courts of Registry include documents on the owners of a particular firm, but enterprises are not required to report the companies in which they hold a stake. However, on the basis of enterprise level field research, examination of public records at the State Property Agency, and interviews with bankers and executives of consulting firms we have been able to reconstruct at least partial networks represented in Figure 3.

¹⁴ Many of these mid-level managers had experiences in the 1980s with an organizational precursor of the present recombinant forms -- the infra-enterprise partnerships -- in which semiautonomous subcontracting units used enterprise equipment to produce goods or services during the "off hours." Like "second economy" producers who continued to hold a job in state enterprises, these intrapreneurial units were a widespread result of hedging strategies in the Hungarian economy. Some of these partnerships were scarcely disguised rent-seeking schemes that privatized profit streams and left expenses with the state-owned enterprise. Others creatively redeployed resources from diverse parts of the shopfloor and regrouped, as well, the

For orientation in this graphic space, we position Figure 3 in relation to Figures 1 and 2 introduced earlier. Figure 1 presents inter-enterprise ownership networks formed through horizontal ties directly linking large enterprises. Figure 2 zooms in on the corporate satellites of a single large enterprise. With Figure 3 we pull back to examine a fragment of a broader inter-enterprise ownership network bringing into focus the ties that link corporate satellites to each other and that form the indirect ties among heterogenous units in a more loosely coupled network.¹⁵

I label this emergent form a recombinet. Here we see that the limited liability companies that began as corporate spin-offs are oriented through ownership ties either to more than one shareholding company and/or to other limited liability companies. In the recombinet, actors recognize the network properties of their interdependent assets and regroup them across formal organizational boundaries. These creative regroupings are, indeed, examples of property transformation, but they cannot be grasped under the simple rubric of "privatization" -- for they fail to respect not only the boundaries between public and private but also between the organizational boundaries of enterprises themselves. Restructuring via the recombinet thus opens the possibilities of increasing the value of existing assets through their recombination. This regrouping does not necessarily imply bringing interdependent assets under the common ownership umbrella of a hierarchically organized enterprise. Hungarian recombinant property thus provides examples of inter-corporate networks that are alternatives to a dichotomously forced choice between markets and hierarchies.

With few exceptions, the literature on postsocialist property transformation (most of it confined to "privatization"),¹⁶ however, assumes that the economic unit to be restructured is the individual enterprise. But the identification of inter-firm networks suggests the possibilities of policies and practices in which the units to be restructured would not be isolated firms but networks of firms. Such an alternative strategy of restructuring would recognize that assets and liabilities have distinctive network properties.¹⁷

informal norms of reciprocity with the technical norms of the professionals. See Stark 1986:492-504; 1989:137-68. On "organizational hedging," see especially Sabel 1990.

¹⁵ The recombinet is not a simple summation of the set of horizontal and vertical ties: to categorically label the ties between a given KFT and a given RT as "vertical" would be to ignore the ways the KFTs are recombining properties. To the extent that genuinely network properties are emergent in the recombinet, the language of horizontal and vertical should give place to more appropriate descriptors such as extensivity, density, tight or loose coupling, strong or weak ties, structural holes, and the like (Breiger and Pattison 1986; Burt 1992).

¹⁶ Notable exceptions are Kern and Sabel (1991); and Sabel and Prokop (1997).

¹⁷ My use of network concepts here departs dramatically from a recent tendency to introduce network variables into the analysis of status attainment or enterprise strategy. In that view (e.g. Coleman 1988), "social capital" is a new individual level variable that interacts with other assets ("financial capital," "human capital," etc.) in the process of career mobility or entrepreneurship. The problem with this ego-centric conception of "network capital," is that it introduces a new, seemingly

The notion of a liability is, of course, an inherently relational, and hence network, concept: a loan appears as a liability on the books of an enterprise and as an asset on the books of the bank that extended the credit; a purchase contract registers as a scheduled payment for one firm and as a receivable for another. A number of excellent studies have recently alerted the field of postsocialist research to the fact that such dyadic asymmetries are frequently linked in complex and extended chains of debt. Recognition of the network properties of liabilities leads, in my view, to policy implications that are in sharp contrast to the prevailing neoliberal orthodoxy. Because firms are in networks of close interdependence, reliance on strict market criteria in which struggling firms must be allowed to fail ("each firm for itself, swim or sink") can trigger waves of business failures among their interdependent partners with the consequence of massive devaluation of otherwise well-performing assets. This scenario is particularly likely where tough bankruptcy laws are suddenly introduced across the board. In such circumstances, an absolute hardening of budget constraints not only drives poorly performing firms into bankruptcy but can also destroy enterprises that would otherwise be quite capable of making a high performance adjustment (Cui 1994). Wanton destruction is not creative destruction, goes this reasoning, and inter-enterprise networks might save some of these struggling but capable firms by establishing mechanisms of risk-spreading and risk-sharing.¹⁸

Such risk spreading, moreover, can be a basis for risk taking. Extraordinarily high uncertainties of the kind we see now in the postsocialist economies can lead to low levels of investment with perverse strategic complementarities (as when firms forgo investments because they expect a sluggish economy based on the lack of investments by others). By mitigating disinclinations to invest, risk spreading within affiliative networks might be one means to break out of otherwise low-level equilibrium traps. Firms in the postsocialist transformational crisis are like mountain climbers assaulting a treacherous face, and interorganizational networks are the safety ropes lashing them together. Neoliberals who bemoan a retarded bankruptcy rate fail to acknowledge that there might be circumstances when this mutual binding is a precondition for attempting a difficult ascent.

network, variable in a manner that neglects the relational dimension that is the fundamental insight of network analysis. Networks become, in that view, a new kind of property in the possession of an individual or an enterprise. In my analysis of interdependent assets, by contrast, attention shifts from networks as property to the properties of networks, that is, it highlights how different kinds of networks have different types of properties/characteristics (e.g., density, shape, and the patterns of tight and loose coupling). See the comparison of inter-enterprise ownership networks in Hungary and the Czech Republic presented below; Sedaitis (1997) for an analysis of different network properties among Russian commodity exchanges; and Grabher and Stark (1997) for a general discussion.

¹⁸ By dampening the performance of the stronger and facilitating the survival of the weaker firms in the interfirm networks, these mechanisms would, of course, impede creative destruction in the conventional sense.

This relationship between risk spreading and risk taking suggests that it would be premature in the postsocialist context to impose a rigid dichotomy between strategies of survival and strategies of innovation. Above all, we should not assume that firms will necessarily innovate when survival so seems to dictate, as if necessity in itself creates the conditions for innovation. Recent studies in organizational ecology, for example, provide strong theoretical arguments that firms are more likely to undertake the risky business of innovation (exposing themselves to the "liabilities of newness" by engaging in unfamiliar routines) not when they are pushed to the wall but when they are buffered from the immediate effects of selection mechanisms. They further demonstrate that interorganizational networks provide this buffering by producing the requisite organizational slack through which enterprises find the available resources that make it possible to innovate.¹⁹ Thus, these studies suggest circumstances in which the simple imperative, "Innovate in order to survive" is reasonably reversed: "Survive in order to innovate."

These insights have been independently confirmed in a recent study by Ickes, Ryterman, and Tenev (1995) who demonstrate, on the basis of rich survey data on Russian firms, that enterprises that are linked in inter-enterprise networks are more likely to engage in various forms of economic restructuring than similar firms that are not so linked. That finding, moreover, is robust: purely private enterprises are not more likely to undertake restructuring than firms in state ownership or mixed property arrangements embedded in inter-enterprise networks.²⁰ In short, when we abandon the forced dichotomy of survival versus innovation, we can see that there are circumstances in which survival strategies can be the prelude to strategies of innovation.

Recombinant Practices (The Czech Variant)

Is recombinant property a peculiarly Hungarian phenomenon? In the concluding section of this paper, I invite the reader to consider the possibility that broadly similar recombinant practices are characteristic not only of postsocialist firms but also of organizational forms in industries with extraordinarily high levels of uncertainty in advanced capitalist economies. In the following section, however, we remain with the postsocialist firm -- not the Hungarian but the

¹⁹ Miner, Amburgery, and Steams (1990). For an extended discussion of buffering in the postsocialist setting, see Grabher and Stark (1997).

²⁰ In a related study on innovation in the Hungary economy, sociologist Pal Tamas (1993) found that purely private and purely state-owned enterprises were less likely to have innovated by introducing new technologies or bringing out new products than firms involved in the organizationally hedging strategy of "mixed" ownership.

Czech, a case all the more interesting because the initial ideology of its leading policy makers appeared so antithetical to recombinant strategies.

The original vision of Vaclav Klaus (Finance Minister of postsocialist Czechoslovakia and later, after the "Velvet Divorce," Prime Minister of the Czech Republic) was determinedly neoliberal.²¹ As a central component of his strategy, a speedy if unorthodox privatization scheme would separate property from the state, from other stakeholders, and from any considerations other than caring for profitability. One of the goals of the privatization program was to create sovereign owners with clear property boundaries thereby avoiding the kinds of mixed property forms and blurred organizational boundaries so characteristic of the Hungarian experience. The much-vaunted voucher privatization scheme (in which state-owned enterprises were put on "auction" for "investment points" held by citizens)²² was to be the means to this end.

By transferring assets of the state enterprises through a voucher-auction, the Czech policy makers appeared to favor a kind of popular capitalism with millions of citizen investors and a clear separation of public and private property. Until just a few months before the first wave of computerized auctions, however, only several hundred thousand citizens had entered the privatization lottery by paying 1000 crowns (about \$35) to register the investment points of their voucher coupon books. The problem of low participation was solved when "investment funds" (an afterthought in the initial program) began to promise citizens who signed over their investment points a 1,000 percent return, payable a year and a day following the transfer of their points into shares. Czechs and Slovaks responded from years of socialist conditions: Averse to risk, they were unwilling to play the investors' game, but they could recognize a guaranteed income when they saw it. Millions signed up.

²¹ "I am convinced that Adam Smith supplies us with a vision of where to go that needs no correction All of that is of utmost importance in our part of the world just now because you will still be able to find that there are dreams of a paternalistic state Adam Smith knew that the market and its evolution is a spontaneous process that can't be planned, organized, or constructed. We are in our part of the world, under permanent pressure to create markets first and to "use" them after that. Everybody (especially our opponents) wants to see perfect reform blueprints based on a detailed sequencing of individual reform measures first. They do not want to participate actively in the often difficult and traumatic transformation process. They used to think in terms of "building socialism" and now they want to "build" markets. They want, therefore, to introduce the invisible hand of the market by means of a visible and omnipotent hand of a government bureaucrat. The Adam Smith message is, however, clear: We have to liberalize, deregulate, privatize at the very early stage of the reform process, even if we are confronted now and will be confronted with rather weak and, therefore, not fully efficient markets." Vaclav Klaus, Prime Minister of the Czech Republic, delivering the Adam Smith Address to the 34th Annual Meeting of the National Association of Business Economists in Dallas, Texas, September 13, 1992.

²² For details see Stark 1992.

The consequence of the voucher privatization was not to make popular capitalism but to make Vaclav Klaus popular.²³ Klaus was named Prime Minister following an election held just weeks after millions had registered their investment points by signing their names next to his signature (as Finance Minister) on their voucher coupon booklets. The outcome, moreover, has not been a people's capitalism but a strange kind of finance capitalism. During the first wave of privatization, only 28.1 percent of investible points were held by individual citizen investors. 71.9 were held by the 429 Investment Privatization Funds (IPFs). When we aggregate the voucher points obtained by the multiple IPFs founded by the same investment company, we find that 48.5 percent of all available voucher points in the first wave were held by the nine largest investment firms. That is, almost half of all the investment points were held by less than 10 investment companies.²⁴ This concentration of investment points, moreover, still understates the predominant position of the largest investment companies because individual voucher holders are almost never represented (and the smaller IPFs are underrepresented) on the boards of directors of the "privatized enterprises" where board seats are typically distributed to the largest blockholders.²⁵

In this Czech finance capitalism, voucher privatization did not sever ties between state and economic institutions, it reorganized them. The investment companies are not unambiguously private: the founders of six of the nine largest finds are predominantly state-owned financial institutions (banks and insurance companies).²⁶ For example, four of the five largest investment companies were founded by the largest banks -- institutions in which the National Property Fund holds the controlling interest (44% of Komerční Banka, 45% of Všeobecná Uverová Banka, 45% of Investiční Bank, and 40% of Česká spořitelna). The same Fund, moreover, still owns about 20 percent of the book value of the "privatized" companies and directly holds seats on the boards of many enterprises. Meanwhile, the Ministry of Finance controls the Konsolidáční Banka which is the major creditor of 80 percent of all medium and large firms in the Czech Republic.

Most importantly, as we see in Figure 4, banks and investment funds are cross-owned and the investment companies are interlocked in dense networks of related holdings. That is, investment companies, founded by the major banks, in turn, acquired shares of the banks

²³ The evolution of Klaus's politics from neo-liberal ideologue to a "programmatic pragmatist" is described in detail in Stark and I3nizsi (1997, Chapter 7, in press). That account focuses not on the personality of the Czech Prime Minister but on the institutional constraints of "extended accountability" that moderated and pragmatized his policies.

²⁴ PlanEcon Inc., "Results of Czechoslovak Voucher Privatization" *PlanEcon Report* vol. VIII, December 1992, pp. 8-9.

²⁵ Brom and Otenstein (1994) estimate that the thirteen largest investment companies hold about 75% of the board seats won in the first wave of voucher privatization.

through the voucher privatization. As John Coffee documents, sizeable stakes in the major commercial, investment, savings, and banks were acquired by investment funds established by the major financial institutions.²⁷ In the typical case, a large investment fund holds shares in its sponsoring financial institution²⁸ as well as in one or more of the other major banks. In addition to their ties through their co-ownership of the banks, Czech investment funds are also linked to each other through their enterprise holdings. Regulations of the voucher-auction prohibiting an investment fund from acquiring more than 20 percent of a given enterprise virtually insured that the typical firm becomes a node at which investment funds intersect. Thus, one of the most important outcomes of voucher "privatization" is that the largest investment funds and the largest banks are criss-crossed by ties of ownership in networks whose density, in all likelihood, surpasses the dense ownership networks of even the Japanese kerietsu.

Interorganizational Networks

Are the Hungarian inter-enterprise ownership networks the East European counterparts of Taiwanese "related enterprises"? Are the cross-owning banks/investment companies Czech versions of the Japanese kerietsu or the Korean chaebol? The question suggests a comparative study of corporate groupings in modern economies. The more proximate question for this investigation of the postsocialist firm is to ask: how do the network patterns of the Hungarian and Czech cases differ?

In both economies we find dense and extensive networks of inter-organizational ownership. But the shape and patterns of these networks are distinctive in each economy, and consequently, the structure of corporate groupings are likely to differ. My analysis indicates that Hungarian networks are formed predominantly through enterprise to enterprise links, sometimes involving banks yet lacking ties between banks and intermediate-level institutions such as investment companies. The Czech case is the mirrored opposite. There, ownership networks are formed predominantly through ties at the meso level among banks and investment funds, but direct ownership connections among enterprises themselves are rare. Restated in the language of network analysis, *whereas Hungarian networks are tightly coupled at the level of enterprises but loosely coupled at the meso level, Czech networks are loosely coupled at the level of enterprises and tightly coupled at the meso level.*

²⁶ Of the remaining three, two were founded by foreign (German and Austrian) banks. The third is the largest "independent" investment company, Harvard Capital and Consulting.

²⁷ Coffee (1996) presents a thorough and lucid discussion of the major issues of corporate governance in the Czech investment funds.

The distinctive patterns of the Czech and Hungarian ownership networks bear the marks of their respective societies prior to 1989 and of their differing pathways from state socialism. Each configuration has been directly shaped by different policies of property transformation (Stark, 1992; Stark and Bruszt 1997). But these economic strategies were not dictated or imposed upon the blank features of a postsocialist institutional vacuum. Instead, they interacted with the strategies of actors within each economy who possessed distinctive organizational resources and who were well-practiced in different repertoires of action, themselves shaped by the distinctive character of their pre-existing network ties.

Through partial economic reforms in Hungary during the 1970s and '80s, enterprises were already gaining considerable autonomy, enjoying greater flexibility in choosing other enterprises as supply partners, and constructing networks of small-scale proto-entrepreneurial producers at (and even within) the boundaries of the firm (Szelenyi 1988; Stark 1989). Moreover, legislation facilitating property transformation was already in place before the system change of 1989 and the installation of the first democratically elected government in May 1990.²⁹ As a consequence, Hungarian firms already had direct enterprise-to-enterprise contacts and a legal framework in which these horizontal ties could be transformed into the inter-enterprise ownership networks of the present.

Czech enterprises, of course, had not enjoyed such autonomy under state socialism. But they were not without their own network resources in their ongoing conflicts with the industrial ministries of the old regime. The difference to Hungary was that these networks operated not through direct enterprise-to-enterprise ties but at a meso level within the Industrial Associations organized along branch or regional lines. So resilient were these meso-level associations that they survived or resurfaced after several attempts at their elimination by the communist authorities (McDermott 1997). It is at this similarly meso level, as opposed to direct enterprise-to-enterprise ties, that the networks of cross-ownership are most dense in the contemporary Czech economy.

In both cases, property relations are being transformed -- but *within structures whose network features exhibit continuity even as their ownership content is altered*. In neither case is property transformation a simple transition from public to private. In both, it results in the blurring of the properties of public and private. And in both, we find the trespassing of organizational

²⁸ By creating subsidiary funds, investment companies easily circumvented the loose regulations that technically prohibited an investment fund from acquiring shares in the bank which founded it.

²⁹ The Company Law which established conditions for creating limited liability companies was enacted already in 1988, and the Law on Enterprise Transformation establishing the legal framework for shareholding companies was enacted in early 1989 (i.e., months before the system change). For details see Stark 1990.

boundaries in "moebius-strip organizations"³⁰ and strategies of recombinant property in which actors diversify their portfolios of assets of very heterogeneous character in attempts to maneuver through situations where organizational survival is fragile not simply because of the uncertainties of the market but because the criteria of success, the measures of worth, and the selection mechanisms are themselves uncertain.

Accounts

In the highly uncertain organizational environment that is the postsocialist economy, relatively few actors (apart from institutional designers) set out with the aim to create a market economy. Many, indeed would welcome such an outcome. But their immediate goals are more pragmatic: at best to thrive, at least to survive. And so they strive to use whatever resources are available. As they do so, they maneuver not only through an ecology of organizations but also through a complex ecology of ordering principles.

To emphasize the patterned and the performative aspects of this process, I exploit a notion of accounts. Etymologically rich, the term simultaneously connotes bookkeeping and narration. Both dimensions entail evaluative judgments, and each implies the other: Accountants prepare story lines according to established formulae, and in the accountings of a good storyteller we know what counts. In everyday life, we are all bookkeepers and storytellers. We keep accounts and we give accounts, and most importantly, we can all be called to account for our actions. It is always within accounts that we "size up the situation," for not every form of worth can be made to apply and not every asset is in a form mobilizable for the situation. We evaluate the situation by maneuvering to use scales that measure some types of worth and not others thereby acting to validate some accounts and discredit others.

The multiple accounts of recombinant property respond to and exploit the fundamental, though diffused, uncertainty about the organizational environment. In transformative economies, firms have to worry not simply about whether there is demand for their products, or about the rate of return on their investment, or about the level of profitability but also about the very principle of selection itself. Thus, the question is not only "Will I survive the market test?" -- but also, under what conditions is proof of worth on market principles neither sufficient nor necessary to survive? Because there are multiply operative, mutually coexistent principles of justification according to which you can be called on to give accounts of your actions, you cannot be sure what counts. By what proof and according to which principles of justification are

³⁰ Sabel, 1990; Cui, forthcoming.

you worthy to steward such and such resources? Because of this uncertainty, actors will seek to diversify their assets, to hold resources in multiple accounts.

This ability to glide among principles and to produce multiple accountings is an organizational hedging. It differs, however, from the kind of hedging to minimize risk exposure that we would find within a purely market logic -- as, for example, when the shopkeeper who sells swimwear and sun lotion also devotes some floor space to umbrellas. Instead of acting within a single regime of evaluation, this is organizational hedging that crosses and combines disparate evaluative principles. Recombinant property is a particular kind of portfolio management. It is an attempt to have a resource that can be justified or assessed by more than one standard of measure (as, for example, the rabbit breeder whose roadside stand advertises "Pets and Meat" in the documentary film, Roger and Me). In managing one's portfolio of justifications, one starts from the dictum: diversify your accounts.

The adroit recombinant agent in the transformative economies of East Central Europe diversifies holdings in response to fundamental uncertainties about what can constitute a resource. Under conditions not simply of market uncertainty but of organizational uncertainty, there can be multiple (and intertwined) strategies for survival -- based in some cases on profitability but in others on eligibility. Where your success is judged, and the resources placed at your disposal determined, sometimes by your market share and sometimes by the number of workers you employ in a region; sometimes by your price-earnings ratio and sometimes by your "strategic importance"; and, when even the absolute size of your losses can be transformed into an asset yielding an income stream, you might be wise to diversify your portfolio, to be able to shift your accounts, to be equally skilled in applying for loans as in applying for job creation subsidies, to have a multilingual command of the grammar of credit worthiness and the syntax of debt forgiveness. To hold recombinant property is to have such a diversified portfolio.

To gain room for maneuver, actors court and even create ambiguity. They measure in multiple units, they speak in many tongues. In so doing, they produce the polyphonic discourse of worth that is postsocialism.

We can hear that polyphonic chorus in the diverse ways that Hungarian firms have justified their claims for participation in a debt-relief program established by the government after its earlier programs had precipitated a near-collapse of the financial system.³¹ The following litany of justifications are stylized versions of claims encountered in discussions with bankers, property agency officials, and enterprise directors:

Our firm should be included in the debt relief program because we will forgive our debtors.³²

Our firm should be included in the debt relief program because we are truly credit worthy.³³

Because we employ thousands.

Because our suppliers depend on us for a market.

Because we are in your election district.

Because our customers depend on our product inputs.

Because we can then be privatized.

Because we can never be privatized.

Because we took big risks.

Because we were prudent and did not take risks.

Because we were planned in the past.

Because we have a plan for the future.

Because we export to the West.

Because we export to the East.

Because our product has been awarded an International Standards Quality Control Certificate.

Because our product is part of the Hungarian national heritage.

Because we are an employee buy-out.

Because we are a management buy-in.

Because we are partly state-owned.

Because we are partly privately-held.

Because our creditors drove us into bankruptcy when they loaned to us at higher than market rates to artificially raise bank profits in order to pay dividends into a state treasury whose coffers had dwindled when corporations like ourselves effectively stopped paying taxes.

And so we must ask, into whose account and by which account will debt forgiveness flow? Or, in such a situation, is anyone accountable?

Heterarchy

If the new institutionalism in economics and the new institutionalism in sociology agree on anything it is that advanced sectors of capitalist economies are witnessing the emergence of

³¹ Those policies are described in Stark (1996). The following chorus is drawn from the same article.

³² Le., our firm occupies a strategic place in a network of inter-enterprise debt.

³³ Le., if our liabilities are separated from our assets, we will again be eligible for more bank financing. Similar translations could be provided for each of the following justifications.

a "new logic of organizing" (Powell 1996) that is an alternative to markets and hierarchies. These sectors have several important features characterized by high uncertainty in organizational environments with extreme volatility of markets, an extraordinary race (often driven by new technologies) to come out with new kinds of products, and increasing returns to learning. Although less technologically-driven, the environments of the postsocialist firms discussed above show similar features. With the collapse of the "markets" of their former Soviet trading partners, postsocialist enterprises must produce new kinds of products and find new markets, often in highly uncertain political and regulatory environments. Rewards are great to those bundles of firms that can learn -- not only in terms of product innovation but in organizational innovation as well. Moreover, the organizational features of these firms make them likely candidates to be included as examples of the newly emergent organizational forms variously labeled "networks" (Powell 1990), "symbiotic arrangements" (Schanze 1993; and other articles in the same issue of the Journal of Institutional and Theoretical Economics), "hybrids" (Williamson 1991; Menard 1996; and, on the same term but with a more creative and complex interpretation, Hutter and Teubner 1993; Teubner 1996), "flexible specialization" (Piore and Sabel 1984; Storper 1989), "moebius strip organizations" (Sabel 1990), and "collaboration" through "discursive quality standards" (Sabel and Prokop 1996).

To that long and ever-expanding list of terms, I add another -- heterarchies -- with the hope of introducing a single expression that immediately evokes several of the processes captured separately by the other terms. By heterarchy I refer to an emergent organizational form with distinctive network properties, asset ambiguity, minimal hierarchy, and multiple organizing principles. I briefly address these elements in turn.

Network properties. At the core of the concept of heterarchy is the insight that, for some sectors, inter-organizational networks must be the basic analytic unit because they are the actual units of economic action.³⁴ Dense networks of interaction, as we saw in our Hungarian and Czech

³⁴ The pathbreaking paper is Powell (1990); see also Grabher (1993). Economic sociologists and legal scholars studying East Asian economies have adopted a network-centered approach in which social networks are the basic units of action. Redding and Whitley (1991, p. 79), for example, argue that "Anglo-Saxon conceptions of the legally bounded firm as the basic unit of economic action are inadequate to explain the economic actions and structure of chaebol and Chinese family businesses, both of which have complex extra-firm linkages influencing decision making." Gilson and Roe (1993) "take as the Japanese structure not a single Japanese corporation in isolation, but the keiretsu structure -- the interlocking webs of firms, which loom so large in the Japanese economy." Gereffi's "global commodity chain" (GCC) approach "looks at the configuration of economic and social networks, rather than the structure and strategy of isolated firms, as a key to understanding new patterns of global competition [T]he transnational governance that define buyer-driven and producer-driven GCCs make convention boundaries between firms, industries, and countries obsolete" (Fonda, Gereffi, and Nonnemaker 1994). Hamilton and Feenstra (1995) offer a similar, but more general argument: "Inter-firm networks that rest on strongly nonnative bonds are better understood as economic organizations in their own right instead of a residual or intermediate category. Embedded networks become units of

cases above and as the new literature abundantly demonstrates, so blur the organizational boundaries of enterprises that the effective unit of action ceases to be the isolated firm. These are ties, moreover, of collaboration based neither on pricing nor property (see below) and so cannot be captured through the conventional categories of markets or hierarchies. The term, "networks," clearly expresses this alternative coordinating mechanism. This reason alone (and there are a good many others) would be enough to explain how the entire field shows considerable path dependency in continuing to adopt it as the term of preference. But, however fruitful in stimulating nearly a decade of research, the problem of labeling these forms as "networks" confounds a name for an organizational form with an analytic approach. That is, as the literature also abundantly demonstrates, not only the emergent network form but also markets and hierarchies can be analyzed in network terms.

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economic action rather than the firms that constitute them . . . The network linkages are stronger than the firms that make up the networks. Firms come and go, but the networks persist over time."

Asset ambiguity. Stated with the greatest brevity: whereas hierarchies involve relations of dependence and markets involve relations of independence, heterarchies involve relations of interdependence. How should we analyze the complex interdependence of assets in these emergent organizational forms?

For the property rights school, it is above all the clarity of property rights that yields the right set of incentives to make restructuring in the postsocialist transformations (and reorganizations in advanced capitalist economies) performance enhancing. This school argues that property can be productively disaggregated (or "dis-integrated," Grey 1980) such that different actors can legitimately claim rights to different aspects and capacities of the same thing. The heterarchies described above in our Hungarian and Czech cases would fail the "clarity" test: property is being transformed, but that restructuring does not always lead to well-defined property rights. However, this "failure" might find them in good company -- for there is reason to suggest that the collaborative networks in advanced sectors in Western Europe and North America are not based on fully clarified property rights.

In his fascinating study of the biotechnology industry, Powell (1996), for example, documents the blurring of organizational boundaries under conditions of extreme asset interdependence where "relevant assets are not easily assembled in a single organization" (p. 205). Although he does not address the clarification of property rights question directly, the image conveyed throughout the entire study is one of distributed property. Powell explicitly argues that the coordination within this "community-level mutualism" is "not a nexus of contracts" (p. 209). Where personnel are rapidly changing jobs (see especially Saxenian 1996) and where the fluid structures of "open architectures" find firms opening their boundaries to engineers and researchers from other organizations (Powell 1996; Sabel 1990, 1995; Sabel and Prokop 1996)), flexibility is not always likely to be based on clearly bounded property rights. Indeed, where "rewards go to the swiftest" (Powell 1990:198), we might expect that projects are often launched before property rights are fully specified. That is, under conditions where production begins even before all design issues have been settled (Sabel 1990; 1995), to wait until the firms' legal experts have resolved all questions of property might jeopardize the extraordinary benefits of first-mover advantage in these highly volatile markets.

On the basis of similar research in advanced manufacturing fields in Germany and the United States, Sabel (1990) and Kogut, Shan, and Walker (1992) demonstrate that under conditions of extraordinarily rapid technological change, actors engage in hedging strategies vis-a-vis other organizations (partners or competitors) in their organizational field. When the future is highly uncertain, it is far from clear at T1 whether your assets will be interdependent

with mine at T2. In such situations, in addition to the dualism make or buy (hierarchy or market) there is an alternative -cooperate. Kogut observes that one manifestation of such a hedging strategy is cross-ownership (not simply among purchasers and suppliers but also among competitors), and he finds dense patterns of cross-ownership among competitors in the field of microprocessing where firms cannot be certain whose standards will be the industry standards in the next round. Sabel goes even further, arguing that, in cases of extremely complex asset interdependence, it is not clear-cut property claims (however dense the cross ownership) but an ambiguity of property claims that provides flexible adaptation to the market. Sabel's argument departs radically from the property rights school: he is suggesting that actors are not assigned different rights over different aspects of an asset but are making (and mutually tolerating) overlapping claims on the same aspect. This is ambiguous property, not disaggregated property.

I thus adopt the term asset ambiguity to refer to the distributed property of organizational heterarchies. Asset ambiguity is related to the notion of asset interdependence but differs from the standard applications of that concept in several important respects. First, asset ambiguity occurs where asset interdependence is so complex that stopping at each point to specify precisely who has claims to what would nullify the very basis of collaboration. Second, whereas asset interdependence refers to instances where actors currently hold interdependent resources, asset ambiguity evokes those (increasingly frequent) moments where actors are uncertain about whether their assets will be interdependent with others in the near future, that is, where there is ambiguity about the interdependence itself. Third, asset ambiguity denotes the ambiguity about what constitutes an asset (most pronounced in postsocialism but prevalent in advanced capitalism as well) under conditions where heterarchies encompass multiple organizing principles (see below).

Minimal hierarchy. This is the element most immediately evoked by heterarchy as an obvious counterpoint to hierarchy without connoting the alternative, markets. Heterarchies cannot successfully disregard a market orientation even though they adopt non-market institutions of coordination.³⁵ Neither can they entirely eliminate internal hierarchy. In fact, postsocialist heterarchies have probably done less to minimize hierarchy than their advanced capitalist counterparts.³⁶ Powell (1996:291) emphasizes the minimal hierarchy of overlapping

³⁵ On the notion of non-market coordination directed toward a market orientation, see especially Bresser Pereira 1993; Schmitter 1988; and Boyer 1991.

³⁶ It is interesting in this light to compare the representation of the corporate satellites of "Heavy Metal" in Figure 2 above to Powell's illustration of the multiple collaborators with Biogen in his Figure I (1996: 201). Produced independently of each other,

interdisciplinary teams in the latter. Sabel (1995) similarly stresses the deliberative, as opposed to hierarchical, character of the "new pragmatism" of production. Two features stand out in Sabel's analysis.

First, the new production relations challenge the strict sequencing of design and execution. Because of strong first mover advantages in which the first actor to introduce a new product (especially one that establishes a new industry standard) captures inordinate market share by reaping increasing returns to scale, firms that wait to begin production until design is completed will be penalized in competition. In these settings, successful strategies integrate conception and execution, with significant aspects of the production process beginning even before design is finalized. Secondly, these new systems of production are also often characterized by simultaneous engineering. Whereas conventional design is sequential, with subsystems presumed to be central designed in detail first and setting the boundary conditions for the design of lower ranking components, in simultaneous engineering, separate project teams develop all the subsystems concurrently. In such concurrent design, the various project teams engage in an ongoing mutual monitoring, as innovations produce multiple, sometimes competing, proposals for improving the overall design (Sabel 1995:24). Success at simultaneous engineering, Sabel argues, depends on this "learning by monitoring" and requires an extenuated organizational reflexivity that sustains rather than squashes ambiguity throughout the entire process.

The lesson from these studies for postsocialist firms is clear: in place of calls to liberate the market or to liberate the state, postsocialist heterarchies are attempting to create institutions of deliberation (Stark and Bruszt 1997). The associative ties of distributed property can produce binding agreements. McDermott's (1997) analysis of the Czech interorganizational networks, for example, demonstrates a web of connections through which a multiplicity of actors are renegotiating not simply contractual ties but their mutual claims on resources. Through that web, firms, banks, investment companies, local governments, trade unions, and parts of the state bureaucracy identify firms that should be saved, devise strategies for restructuring assets, bargain about the allocation of resources, and renegotiate the very rules and governance institutions for resolving disputes among them.

the two diagrams show a striking similarity. But there are subtle differences in the two figures -- no doubt reflecting the persistent hierarchy in the postsocialist case and the minimal hierarchy of the Cambridge, Massachusetts example. For close observers of Hungarian industry (for whom the identity of the firm could scarcely be disguised), Heavy Metal surely appears as the most hierarchical of heterarchies. But even in this case, hierarchy is not going unchallenged -as evidenced by the ongoing tug and pull

Multiple organizing principles. Heterarchy is defined not only by the non-hierarchical relations that it fosters; as the term implies, it also incorporates heterogeneous organizing principles. Heterarchies depart from a mono-organizational structure in a dual sense: their network properties span the boundaries of multiple enterprises and their practices embrace multiple organizational logics. As we saw in the polyphonic discourse of postsocialism, Hungarian heterarchies are adept at maneuvering among a multiplicity of legitimating principles. Such a habitus was well-practiced: Since 1982, the wide-spread adoption of semi-autonomous subcontracting teams inside the socialist enterprise found actors operating across several "economies" within the same organizational domain, exploiting on a daily basis the ambiguities of co-existing frames of worth and justice (Stark 1990a).

Although this multiplicity of rationalities is more pervasive in the postsocialist setting, the collaborative networks of fast-breaking sectors in the United States are not lagging far behind. Postsocialist firms have no monopoly on the blurring of public and private -- as Gieryn's (forthcoming) fascinating description of the architecture of a biotechnology facility at a major research university ironically depicts. Saxenian (1996) similarly demonstrates the prolific crisscrossing of universities and enterprises in Silicon Valley. As Powell (1996: 200) observes:

The cross-traffic between universities and biotech companies is so extensive and reciprocal that it is appropriate to consider them part of a common technological community. University professors take their sabbaticals at biotech firms, and both postdoctoral fellows and senior scientists move back and forth between universities and biotech firms As a result, biotechnology is reshaping university policy regarding relations between professors and private companies, and altering both the traditional means of finding biomedical research and the opportunity structures for young scientists. A new identity has emerged -- the scientist-entrepreneur.

Powell does not label the new identity a "hybrid" arrangement; but he might well have. It is this hybrid structure, incorporating multiple rationalities in the same organization (and sometimes in the same person) that gives heterarchies the reflexivity and flexibility to maneuver simultaneously among multiple evaluative principles and draw on a broad range of resources (universities, private ventures, public finds) in their diverse environments. It is not only the postsocialist manager who must be skilled in the polyphonic discourse of worth.³⁷

Accountability

between central management in the company headquarters and the "Club of Managing KFT Directors" coordinating activities among the satellites.

³⁷ Issues of worth and justification raise important questions for the new economic sociology. Recall that the maturation of sociology was struck in an institutionalized bargain with economics separating their disciplinary objects of study (Camic 19sx): You, the economists, study value; we sociologists will study values. Acknowledging your jurisdiction in the analysis of the

When they attempt to hold resources that can be justified by more than one legitimating principle, actors within heterarchies make assets of ambiguity. It is this ambiguity, together with the network properties that underlie it, that forms the basis for the kind of strategic play that Padgett and Ansell (1993) label "robust action." At the core of robust action is the fact "that single actions can be interpreted coherently from multiple perspectives simultaneously, the fact that single actions can be moves in many games at once, and the fact that public and private motivations cannot be parsed."³⁸ The outcome is flexible opportunism, that is, maintaining discretionary options across unforeseeable futures in the face of hostile attempts by others to narrow those options.³⁹ Actors within heterarchies are doubly bound: bound in their associative ties, and bound to speak in multiple tongues. But this peculiar "double bind" produces not an organizational schizophrenia but an organizational flexibility.⁴⁰

Is this acute flexibility an entirely unmixed blessing? I think not. In this I depart from the now standard formula in which the economic sociologist enumerates the problems created by markets, the problems created by hierarchy, and then delineates the problems resolved by the new organizational forms (hybrids, networks, flexible specializations, etc.). But as the best practitioners are already recognizing, the new organizational forms also create new problems. The same opportunistic blurring of boundaries that leads to a recombination of assets and a decomposition and reintegration of organizations also bears a social cost: it erodes (or, in the postsocialist case, retards) accountability. The problem with the peculiarly diversified portfolios of the new heterarchies is that actors can all too often easily and almost imperceptibly switch among the various positions they hold simultaneously in the coexisting moral economies. To be accountable according to many different principles becomes a means to be accountable to none.

economy, we study the social relations in which economies are embedded. Economic sociologists are no longer accepting that division of labor. It is time for a sociology of worth. See Stark 990a.

³⁸ Padgett and Ansell 1993: 1263. Teubner (1996:62-3) adopts different language to the same effect: "What networks gain through double attribution is a drastic improvement of their environmental situation. One and the same configuration can appear in one environment as a multitude of individual actors connected by contracts and in a different environment as one collective actor, an autonomous player in a different game. This chameleon-like quality of networks gives them access to new environments which would not be accessible to them if they were either a mere nexus or a mere collective actor . . . Indeed, in their hybrid character, networks seem to be tailored to the bridging of different contradictory rationalities."

³⁹ Crucial for maintaining discretion is not to pursue any specific goals: "For in nasty strategic games ... positional play is the maneuvering of opponents into the forced clarification of their (but not your) tactical lines of action" (Padgett and Ansell 1993: 1265). Victory, hence, means locking in others, but not yourself, to goal oriented sequences of strategic play that become predictable thereby.

⁴⁰ Under certain conditions, hybrid arrangements can provide for an institutional environment where paradoxical communication is not repressed, not only tolerated, but invited, institutionally facilitated and turned productive" (Teubner 1996:59).

Heterarchies (hybrids, networks) pose a new set of conceptual problems for legal theory. Whereas organizational analysis (from different disciplinary and theoretical perspectives) now recognizes a new type of economic agent, legal theory (with its construct of the legal personality limited to the individual and the corporation) does not yet recognize the new economic actor as a new moral agent.⁴¹ Unless we are willing to posit "flexibility" as an over-riding value and a metalegitimating principle, we cannot escape the challenge that postsocialism poses, not uniquely but acutely, for our epoch: if heterarchies are viable economic agents of permanently ongoing restructuring, how can we make them accountable?

⁴¹ On the conceptual problems for legal theory of recognizing networks as new moral actors see the insightful work of Ganther Teubner (1991); Hutter and Teubner (1993); also Buxbaum (1993).

References

- Allen, Peter M. and J.M. McGlade. 1987. "Modeling Complex Human Systems: A Fisheries Example." European Journal of Operational Research 24: 147-67.
- Arthur, W. Brian. 1994. Increasing Returns and Path Dependence in the Economy. Ann Arbor: University of Michigan Press.
- Baron, James N. and Michael T. Hannan. 1994. "The Impact of Economics on Contemporary Sociology." Journal of Economic Literature (Sept.): 1111-1146.
- Barnett, William P. 1995. "The Dynamics of Competitive Intensity." Stanford, Calif.: Stanford Business School Research Paper #1227.
- Boltanski, Luc and Laurent Thevenot. 1991. La justification: Les economies de la grandeur. Paris: Gallimard.
- Boyer, Robert and Andre Orlan. 1992. "How Do Conventions Evolve?" Journal of Evolutionary Economics 2: 165-177.
- Breiger, Ronald L. and Philippa Pattison. 1986. "Cumulated Social Roles: The Duality of Persons and Their Algebras." Social Networks 8(3): 215-56.
- Breiger, Ronald L. and John M. Roberts, Jr. "Solidarity and Social Networks," Journal of Mathematical Sociology 20: in press.
- Brom, Karla and Mitchell Orenstein. 1994. "The 'Privatized' Sector in the Czech Republic: Government and Bank Control in a Transitional Economy." Europe-Asia Studies 46 (6): 893-928.
- Burt, Ronald. 1992. Structural Holes: The Social Structure of Competition. Cambridge, Mass.: Harvard University Press.
- Buxbaum, Richard M. 1993. "Is Network' a Legal Concept?" Journal of Institutional and Theoretical Economics, 149(4): 698-705.
- Callon, Michel, and Bruno Latour. 1981. "Unscrewing the Big Leviathan: How Actors Macrostructure Reality and How Sociology Help Them." Pp. 277-303 in Advances in Social Theory and Methodology edited by Karin Knorr and Aron Cicourel. London: Routledge.
- Carroll, Glenn R. and J.R. Harrison. 1994. "On the Historical Efficiency of Competition between Organizational Populations." American Journal of Sociology 100(3): 720-49.
- Coffee, John. 1996. "Institutional Investors in Transitional Economies: Lesson from the Czech Experience." Pp. 111-186 in Corporate Governance in Central Europe and Russia: Volume I. Banks, Funds, and Foreign Investors, edited by Roman Frydman, Cheryl W. Gray, and Andrzej Rapaczynski. Budapest: Central European University Press.
- Coleman, James. 1988. "Social Capital in the Creation of Human Capital." American Journal of Sociology 94 (supplement): S95-S120.

- Cui, Zhiyuan. 1994. "Epilogue: A Schumpeterian Perspective and Beyond." In China: A Reformable Socialism?, edited by Yang Gan and Zhiyuan Cui. Oxford: Oxford University Press.
- . Forthcoming. "Moebius-Strip Ownership and Its Prototype in Chinese Rural Industry." Economy and Society.
- David, Paul A. "Understanding the Economics of QWERTY." Pp. 30-49 in W.N. Parker, ed., Economic History and the Modern Economist. Oxford: Basil Blackwell.
- 1192. "Path Dependence and the Predictability in Dynamic Systems with Local Network Externalities: A Paradigm for Historical Economies." In Technology and the Wealth of Nations, edited by C. Freeman and D. Foray. London: Pinter Publishers.
- DiMaggio, Paul and Powell, Walter. 1991. "Introduction." Pp. 1-38 in The New Institutionalism in Organizational Analysis, edited by P. DiMaggio and W. Powell. Chicago: university of Chicago Press.
- Dosi, Giovanni. 1991. "Some Thoughts on the Promises, Challenges and Dangers of an "Evolutionary Perspective" in Economics." Journal of Evolutionary Economics 1(1): 1-3.
- Dosi, Giovanni and Luigi Marengo. 1994. "Some Elements of an Evolutionary Theory of Organizational Competencies." Pp. 157-178 in Richard W. England, ed., Evolutionary Concepts in Contemporary Economics. Ann Arbor: University of Michigan Press.
- Dupre, John A. (ed). 1987. The Latest on the Best: Essays on Evolution and Optimality. Cambridge, Mass: MIT Press.
- Fonda, Stephanie, Gary Gereffi, and Lynn Nonnemaker. 1994. "Tapping the Global Economy: An Analysis of Globalization Strategies Among U.S. Apparel and Retail Companies." Conference on the New Institutionalism in Economic Sociology. Cornell University, October.
- Gereffi, Gary. 1994. "The Organization of Buyer-Driven Global Commodity Chains: How U. S. Retailers Shape Overseas Production Networks." Pp. 95-112 in Commodity Chains and Global Capitalism, edited by Gary Gereffi and Manuel Kornzeniewicz. Westport, Conn.: Praeger.
- Gerlach, Michael L. and James R. Lincoln. 1992. "The Organization of Business Networks in the United States and Japan." Pp. 491-520 in Networks and Organizations, edited by Nitin Nohira and Robert G. Eccles. Cambridge, Mass.: Harvard Business School Press.
- Gieryn, Thomas F. in press. "Biotechnology's Private Parts (and Some Public Ones)." In Private Science: The Biotechnology Industry and the Rise of Molecular Biology, edited by Arnold Thackray. Philadelphia: University of Pennsylvania Press.
- Gilson, Ronald J. and Mark J. Roe. 1993. "Understanding the Japanese Keiretsu: Overlaps Between Corporate Governance and Industrial Organization." The Yale Law Journal 102: 871-906.

- Gould, Stephen J. 1987. "The Panda's Thumb of Technology." Natural History 1, January: 14-23.
- Gould, Stephen J. and Richard C. Lewontin. 1984. "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme." Pp. 252-270 in Conceptual Issues in Evolutionary Biology, edited by Elliott Sober. Cambridge, Mass.: MIT Press.
- Grabher, Gernot. 1993. "Rediscovering the social in the economics of interfirm relations." Pp. 1-31 in The Embedded Firm: On the Socioeconomics of Industrial Networks, edited by Gernot Grabher. London and New York: Routledge.
- 1994. In Praise of Waste: Redundancy in Regional Development. Berlin: Edition Sigma.
- Grabher, Gernot and David Stark. 1997. "Organizing Diversity: Evolutionary Theory, Network Analysis, and Postsocialist Transformations." Pp. 1-32 in Restructuring Networks: Legacies, Linkages, and Localities in Postsocialism, edited by Gernot Grabher and David Stark. London and New York: Oxford University Press.
- Granovetter, Mark. 1995. "Coase Revisted: Business Groups in the Modern Economy." Industrial and Corporate Change 4, no. 1.
- Hamilton, Gary G. and Robert C. Feenstra. 1995. "Varieties of Hierarchies and Markets: An Introduction." Industrial and Corporate Change 4(1): 51-91.
- Hamilton, Gary G., William Zeile and Wan-Jin Kim. 1990. "The Network Structures of East Asian Economies." Pp. in Capitalism in Contrasting Cultures, edited by S.R. Clegg and S.G. Redding. Berlin: de Gruyter.
- Hannan, Michael T. 1985. "Uncertainty, Diversity, and Organizational Change." Pp. 73-94 in Behavioral and Social Sciences: Fifty Years of Discovery, edited by ??????. Washington, D.C.: National Academy Press.
- Hebberlein, Greg. 1995. "Circuit Breakers Don't Electrocute Investors ... Yet." The Seattle Times, March 19, 1995.
- Hoshi, Takeo. 1994. "The Economic Role of Corporate Grouping and the Main Bank System." Pp. 285-309 in The Japanese Firm: The Sources of Competitive Strength, edited by Masahiko Aoki and Ronald Dore. London and New York: Oxford University Press.
- Hutter, Michael and Crunther Teubner. 1993. "The Parasitic Role of Hybrids." Journal of Institutional and Theoretical Economics 149(4): 706-715.
- Ickes, Barry W. and Randi Ryterman. 1994. "From Enterprise to Firm: Notes for a Theory of the Enterprise in Transition." Pp. 83-104 in The Postcommunism Economic Transformation edited by Robert W. Campbell. Boulder, Colo.: Westview Press.
- Ickes, Barry W., Randi Ryterman, and Stoyan Tenev. 1995. "On Your Marx, Get Set, Go: The Role of Competition in Enterprise Adjustment." Unpublished manuscript, The World Bank, September.

- Katz, M.L. and C. Shapiro. 1985. "Network Externalities, Competition, and Compatibility." American Economic Review 75(3): 424-40.
- Kemeny, Szabolcs. 1996. "Competition, Cooperation, and Corruption: Economic Practice in a Transforming Market in Hungary." Paper prepared for the Tenth International Conference of Europeanists, Chicago, March 1996.
- Kogut, Bruce and Udo Zander. 1992. "Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology." Organization Science, 3(3): 383-97;
- Kogut, Bruce, Weijan Shan, and Gordon Walker. 1992. "The Make-or-Cooperate Decision in the Context of an Industry Network." Pp. 348-365 in Networks and Organizations, edited by Nitin Nohria and Robert G. Eccles. Cambridge, Mass.: Harvard Business School Press.
- Lincoln, James R., Michael L. Gerlach, and Christina L. Ahmadjian. 1996. "Keiretsu Networks and Corporate Performance in Japan." American Sociological Review 61(1): 67-88.
- Littwack, John. 1994. "Strategic Complementarities and Economic Transition", Discussion Paper, Institute for Advanced Study/Collegium Budapest.
- March, James G. 1991. "Exploration and Exploitation in Organizational Learning." Organization Science 2(1):71-87.
- McDermott, Gerald A. 1997. "Rethinking the Ties that Bind: The Limits of Privatization in the Czech Republic." Pp. 70-106 in Restructuring Networks in Postsocialism: Legacies, Linkages, and Localities, edited by Gernot Grabher and David Stark. Oxford: Oxford and New York University Press.
- Menard, Claude. 1996. "On Clusters, Hybrids, and Other Strange Forms: The Case of the French Poultry Industry." Journal of Institutional and Theoretical Economics 152(1):154-183.
- Miner, Anne S., Terry L. Amburgey, and Timothy M. Steams. 1990. "Interorganizational Linkages and Population Dynamics: Buffering and Transformational Shields." Administrative Science Quarterly 35 : 689-713.
- Nelson, Richard and Sidney Winter. 1982. An Evolutionary Theory of Economic Change. Cambridge, Mass.: Harvard University Press.
- Padgett, John F. 1992. "Learning from (and about) March." Contemporary Sociology 21(6):744-749.
- Padgett, John F. and Christopher K. Ansell. 1993. "Robust Action and the Rise of the Medici, 1400-1434." American Journal of Sociology 98(6): 1259-1319.
- Powell, Walter W. 1987. "Hybrid Organizational Arrangements: New Form or Transitional Development." California Management Review 30 (1): 67-87.
- 1990. "Neither Market nor Hierarchy: Network forms of Organization." Pp. 295-336 in Research in Organizational Behavior, volume 12, edited by B. Staw and L. L. Cummings. Greenwich, Conn.: JAI Press.

- . 1996. "Inter-Organizational Collaboration in the Biotechnology Industry." Journal of Institutional and Theoretical Economics 152: 197-225.
- Sabel, Charles F. 1990. "Mobius-Strip Organizations and Open Labor Markets: Some Consequences of the Reintegration of Conception and Execution in a Volatile Economy." Pp. 3-54 in Social Theory for a Changing Society, edited by Pierre Bourdieu and James Coleman. Boulder, Colo. and New York: Westview Press and Russell Sage Foundation.
- 1992. "Studied Trust: Building new forms of Co-operation in a Volatile Economy." Pp. 215-250 in Industrial District and Local Economic Regeneration, edited by Frank Pyke and Werner Sengenberger. Geneva: International Labour Organization.
- 1993. "Constitutional Ordering in Historical Perspective." Pp. 65-123 in Games in Hierarchies and Networks, edited by Fritz Scharpf Boulder, Colo: Westview Press.
- 1994. "Learning by Monitoring: The Institutions of Economic Development." Pp. 137-165 in The Handbook of Economic Sociology, edited by Neil J. Smelser and Richard Swedberg. Princeton, N.J.: Princeton University Press.
- 1995a. "Design, Deliberation, and Democracy: On the New Pragmatism of Firms and Public Institutions." Paper presented to the conference on Liberal Institutions, Economic Constitutional Rights, and the Role of Organizations. European University Institute, Florence, December.
- 1995b. "Intelligible Differences: On Deliberate Strategy and the Exploration of Possibility in Economic Life." Paper presented to the 36th Annual Meeting of the Societa Italiana degli Economisti, Florence, October.
- Sabel, Charles F. and Jane E. Prokop. 1996. "Stabilization through Reorganization?: Some Preliminary Implications of Russia's Entry into World Markets in the Age of Discursive Quality Standards." Pp. 151-191 in Corporate Governance in Central Europe and Russia. Volume II: Insiders and the State, edited by Roman Frydman, Cheryl W. Gray, and Andrzej Rapaczynski, Budapest and London: Central European University Press.
- Saxenian, AnnaLee. 1994. Regional Advantage: Culture and Competition in Silicon Valley and Route 128. Cambridge: Harvard University Press.
- Schanze, Erich. 1993. "Symbiotic Arrangements." Journal of Institutional and Theoretical Economics. 149(4):691-8.
- Smith, John Maynard. 1984. "Optimization Theory in Evolution." Pp. 289-315 in Conceptual Issues in Evolutionary Biology, edited by Elliott Sober. Cambridge, Mass.: MIT Press.
- Stark, David. 1989. "Coexisting Organizational Forms in Hungary's Emerging Mixed Economy." Pp. 137-168 in Remaking the Economic Institutions of Socialism: China and Eastern Europe, edited by Victor Nee and David Stark. Stanford: Stanford University Press.
- 1990a. "La valeur du travail et sa retribution en Hongrie." Actes de la recherche en sciences sociales (Paris) #85, November:3-19. Available in English as "Work, Worth, and Justice."

- Harvard University, Center for European Studies, Program on Central and East Europe Working Papers Series, #5.
- 1990b. "Privatization in Hungary: From Plan to Market or From Plan to Clan?" East European Politics and Societies 4 (3): 351-392.
- 1992. "Path Dependence and Privatization Strategies in East Central Europe." East European Politics and Societies 6(1):17-53.
- 1996. "Recombinant Property in East European Capitalism." American Journal of Sociology 101: 993-1027.
- Stark, David and Laszlo Bruszt. 1997. Postsocialist Pathways: Transforming Politics and Property in East Central Europe. New York: Cambridge University Press, in press.
- Streeck, Wolfgang. 1996. "Beneficial Constraints: On the Economic Limits of Rational Voluntarism," in J. Rogers Hollingsworth and Robert Boyer, eds, Contemporary Capitalism: The Embeddedness of Institutions, New York and Cambridge: Cambridge University Press, in press.
- Storper, Michael. 1989. "The Transition to Flexible Specialization in the Film Industry: the Division of Labour, External Economies, and the Crossing of Industrial Divides." Cambridge Journal of Economics, 13 (3): 273-305.
- Szelenyi, Ivan. 1988. Socialist Entrepreneurs: Embourgeoisement in Rural Hungary. Madison: University of Wisconsin Press.
- Tamas, Pal. 1993. "Innovacios teljesitmenyek es vallalati strategiak." (Achievements in Innovation and Company Strategies) Working Paper. Budapest: Institute for Social Conflicts.
- Teubner, Ginter. 1991. "Beyond Contract and Organizational?: The External Liability of Franchising Systems in German Law." Pp. 105-132 in Franchising and the Law: Theoretical and Comparative Approaches in Europe and the United States, edited by Christian Joerges. Baden-Baden: Nomos Verlagsgesellschaft.
- 1993. "The Many-Headed Hydra: Networks as Higher-Order Collective Actors." Pp. 4151 in Corporate Control and Accountability: Changing Structures and the Dynamics of Relation, edited by Joseph McCahery, Sol Picciotto, and Colin Scott. Oxford: Clarendon Press.
- 1996. "Double Bind: Hybrid Arrangements as De-Paradoxifiers." Journal of Institutional and Theoretical Economics 152(1):59-64.
- Thdvenot, Laurent. 1985. "Rules and Implements" Investment in Forms." Social Science Information 23 (1): 1-45.
- Walder, Andrew G. 1995. "Local Governments as Industrial Firms: An Organizational Analysis of China's Transitional Economy." American Journal of Sociology 101 (2): 263-301.

Weick, Karl E. 1977. "Organization Design: Organizations as Self-Designing Systems." Organizational Dynamics 6 (2): 31-45.

White, Harrison C. 1992. Identity and Control. Princeton, NJ.: Princeton University Press.

-- 1993. "Values Come in Styles, Which Mate to Change." Pp. 63-91 in The Origins of Values, edited by Michael Hechter, Lynn Nadel, and Richard E. Michod, New York: Aldine de Gruyter.

Williamson, Oliver E. 1981. "Economics of Organization: The Transaction Cost Approach." American Journal of Sociology 87: 548-77.

-- 1985. The Economic Institutions of Capitalism. New York: Free Press.

-- 1993. "Transaction Cost Economics and Organization Theory." Industrial and Corporate Change 2: 107-56.