

SYMPOSIUM: NEW DIRECTIONS IN REGIONAL SCIENCE

Soft Variables in Regional Science

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Abstract: This paper outlines briefly how "soft" variables related to social, political, and psychological phenomena are involved in issues central to regional science, such as development. The discussion centers around three concepts—knowledge, social capital, and institutions—that influence or catalyze economic development. Each of these concepts has crept into regional science over the past decade, but they have not been integrated into our mainstream understanding of how development takes place. These soft variables may be more important to regional and local economies than the traditional considerations of economic development.

I. INTRODUCTION

This paper is a brief sketch of how "soft" variables related to social, political, and psychological phenomena are involved in issues central to regional science, such as development. The discussion centers around three concepts—knowledge, social capital, and institutions—that influence or catalyze economic development. Each of these concepts has crept into regional science over the past decade, but they have not been integrated into our mainstream understanding of how development takes place. The origin of many of these ideas is economic sociology, where spokespeople such as Granovetter (1992) and Swedberg and Granovetter (1992) have insisted that economic action is a form of social action and that economic institutions are social constructions. Although the three phenomena addressed here are present in other regional contexts, all of them are "soft" variables that are critical to understanding why some places are successful in their development efforts while others are not (McDowell 1995).

One of the burdens of peripheral and rural regions is their disadvantage, relative to urban areas, in access to suppliers and customers, information, and labor. This disadvantage may have grown as flexible specialization and its shorter product life cycles, greater product differentiation and economies of scope, and greater demand for skills (or human capital) among workers has underscored a number of social variables, particularly entrepreneurship. All of these have become increasingly important since branch production plants are not likely to be a basis for future rural growth (Barkley 1993).

The following sections elaborate briefly on three variables that help us to understand the process of development. The first is knowledge—a key idea in development thinking worldwide, with connections to bottom-up development

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(as opposed to top-down initiation and control). The second section examines the social dynamics of local development in the context of social capital. The third section extends both sets of ideas to the role of institutions. The paper draws from a broad set of literatures that, together, establish these three ideas as central to how development occurs, with some mention of interfirm networks, on which much of my recent research has focused.

II. KNOWLEDGE

Links and Learning

Knowledge has been at least implicit for some time in research on technological change, high-technology industries and, more recently, on high knowledge-content activities and occupations. An added boost has come from endogenous growth models and research on learning by firms (Aghion and Howitt 1998; Maskell et al. 1998; Nijkamp and Poot 1998).

A different conception of knowledge—local knowledge—describes “crafts of place” and skills like gardening, politics, and law “that work by the light of local knowledge” (Geertz 1983, p. 167). Since the 1980s, development policies in developed countries also have embraced a greater orientation on local (and informal) mechanisms such as the stimulation of entrepreneurship, rather than external or exogenous forces, such as branch production or back offices. However, “there is no obvious first best approach to local economic development” and each locality will depend on local institutions, priorities, and relationships (D’Arcy and Guissani 1996, p. 171). Proposals for self-development initiatives implicitly recognize local knowledge in community development (Flora et al. 1992; Flora et al. 1997). These rely on, among other things, human resources, ideas, and institutions.

It is critical that links to outside, even global, networks be established and maintained. The level of innovativeness and competitiveness of firms in rural areas—or any area—depends not only on the degree to which firms are tied to *local* networks of suppliers—the industrial district model—but also on the presence of links to *external* markets. Links to knowledge sources outside the community—what Flora and Flora (1993) call *vertical links*—depend to a large degree on the presence of gatekeepers. Gatekeepers serve as a bridge between organizations, providing translations across discipline-specific terminologies and organizational cultures. Gatekeepers proactively acquire external information and pass it on to others in the community (Falemo 1989). The role of gatekeepers in selecting and filtering information is critical, but this role is rarely institutionalized or formalized.

Importantly, some gatekeepers function as “community entrepreneurs,” “social entrepreneurs,” or “influentials,” who have the development of their local community as a goal. Gatekeepers provide the sorting and evaluating that others—and especially small-firm owners and managers—are less able to do (Rosenfeld 1992, p. 315). Increasingly, local policies involve *partnerships* between public and private sector actors, and gatekeepers are needed to link the two sectors.

The current regional "best practice" is to be a *learning region* (Asheim 1996; Florida 1995). The interesting point concerning regional development is that agglomeration, while often related to learning dynamics, is no guarantee that learning will take place. When found in combination with a technical culture and strong institutions, learning proceeds efficiently based both on local knowledge and assets and on links to networks elsewhere (Maillat 1995; Storper 1995). The strength of the local learning system depends greatly on competent governments and firms working to understand and support one another for the benefit of the region and its population. This mutual support system in a networked learning region hinges on social capital, the topic of the next section.

The Importance of Networks

Empirical research consistently finds that learning about technologies occurs primarily via informal channels of communication—through interpersonal contacts, including family, friends, and colleagues (for reviews of this topic, see Malecki 1997). Interpersonal contacts, which provide social support and self-confidence, spark business networks and supply resources needed by the business and a strategic capacity to learn and organize for new activities. A firm's *trade network*, involving its linkages for traded goods and services, is distinct from its *knowledge network*, which focuses on the flow of information and exchange of knowledge irrespective of its connection to the flow of goods (Gelsing 1992). As with communities, the use of *external resources* is critical to the success of flexible firms. For small firms and new firms, contacts are especially likely to be local and trust based (Mønsted 1993). In the absence of trust, communication is less frequent and full cooperation cannot occur. Competition and cooperation are jointly present in interfirm networks. Together, these processes create relationships that are stable but not static; they gradually change in response to changes external and internal to the network.

The effect of networks is clearly distinct from that of agglomeration. A case in point is the creation of science parks or research parks as a policy that attempts (at least implicitly) to create complexes of interfirm interaction through proximity and agglomeration or clustering. However, interaction does not necessarily take place despite geographical proximity; "something else" is needed. This "something else" often is described simply as *synergy*, and it requires the presence of social structures of sociability, trust, and an industrial structure that demands interaction among firms in the sense of untraded interdependencies (Storper 1997).

As important as networks—local and nonlocal—are, they do not provide all the things that make development happen. Also needed are a collective purpose and collective behavior, as opposed to entrepreneurial greed, that can benefit all entrepreneurs in a community. That collective behavior creates social capital.

III. SOCIAL CAPITAL

Social capital, a concept put forward most prominently by Coleman (1988), has attracted a great deal of attention.¹ However, Coleman's (1988) definition—that "social capital is defined by its function" and "inheres in the structure of relations between actors and among actors" (Coleman 1988, p. S98)—has proven to be less than enlightening for many trying to apply it. Portes and Sensenbrenner (1993), broadening Coleman's (1988) concept to incorporate Granovetter's (1985) analysis of embeddedness, redefine social capital as "those expectations for social action within a collectivity that affect economic goals and goal-seeking behavior of its members, even if those expectations are not oriented toward the economic sphere" (Portes and Sensenbrenner 1993, p. 1323). These expectations include shared values, reciprocity, solidarity, and enforceable trust. Social capital is closely related to the topic of networks (the "structure of relations" that Coleman refers to). Indeed, Fountain (1998, p. 89) asserts that "the constituent elements of social capital are trust, norms, and networks."

This sociological interpretation of social capital is not directly applicable for development. It is the political translation that is more useful—that development takes place because of *social capital*, the mesh of public and private sector interactions that foster economic and social activity (Putnam 1993). Building on this thinking, Flora and Flora (1993) and Flora et al. (1997) have proposed elements of an "entrepreneurial social infrastructure," which represents the presence of social capital in a region. Three dimensions are critical: symbolic diversity (signifying openness), resource mobilization (indicating equality and a willingness to invest collectively and locally), and quality of networks (which should be diverse, horizontal, and vertical). Portes (1998) warns that social capital also can be negative, when outsiders are excluded or excessive demands are placed on group members.

Social capital is fundamentally cultural. Fukuyama defines it as "a capability that arises from the prevalence of trust in a society or in certain parts of it" (Fukuyama 1995, p. 26). Social capital, unlike human capital (with which it often is confused because of Coleman's seminal article), is not created or acquired by a rational investment decision of an individual in education or training. It occurs through the acquisition of norms (or "virtues," such as loyalty, honesty, and dependability) that are common to a group. Thus, social capital cannot be acquired by individuals acting alone. It is created and transmitted through cultural mechanisms like tradition, religion, or historical habit, which create shared ethical values and a common purpose (Fukuyama 1995, pp. 26-27).

Social capital facilitates market transactions in three ways: (1) through the creation of a system of generalized reciprocity; (2) through the establishment of information channels, which provide sorted and evaluated information and knowledge; and (3) through the simplification of market transactions by instituting norms and sanctions by which economic exchanges can occur, thus bypassing

¹For useful, but very different, reviews of the concept of social capital, see Bolton (1998), Flora et al. (1997), Fountain (1998), Hariss and de Renzio (1997), Portes (1998), and Woolcock (1998).

costly and legalistic institutional arrangements associated with market transactions (Coleman 1988; Putnam 1993). Thus, social capital depends upon, and reinforces, shared values and trust-based relationships that go beyond purely market transactions. "Since the relationship is a positive, reciprocal one, there is the potential for a 'virtuous' circle: an increase in the level of civic participation leads to an increase in positive beliefs about others, leading to greater participation, and so on" (Brehm and Rahn 1997).

Interpersonal trust is particularly important in local contexts. In a regional setting, especially in innovative milieux, trust operates as the short-cut mechanism for communication and cooperation between firms (Hansen 1992). Trust and the embeddedness of economic relationships into "the deeper social fabric" or the communal, noneconomic institutions of the local area are what distinguish industrial districts from other localized agglomerations of firms (Harrison 1992, p. 479). Trust is difficult to measure, of course, but it forms the basis for the interactions that define a culture—national, regional, or local—and that allow values and norms to be passed on to succeeding generations (Fukuyama 1995). Trust creates and reinforces mutual obligations and cooperation, as opposed to legalistic, arms-length contractual relations. Trust also requires personal relationships that transcend the contact at hand, reinforced by face-to-face relationships. In interfirm relationships, most indicative of trust are unstandardized or nonroutine information exchanges (Gelsing 1992).

IV. INSTITUTIONS AND INSTITUTIONAL EMBEDDEDNESS

At the national level, it is clear that institutions shape the path of growth and the distinct national system of innovation in each country (Lundvall 1992; Nelson 1993). The local institutions that support learning in firms and in workers comprise what can be called a *regional system of innovation*, similar in nature to national system of innovation (Arcangeli 1993; Cooke, Gomez Uranga, and Etxebarria 1997). The regional system links global knowledge of generic technologies to specific applications produced by local firms (Arcangeli 1993). Many of the greatest challenges are very soft. For example, the personality of skills of key network people: they must have networking skills; they must be psychologically open; they must combine technology, business, management, and marketing skills; they must be able to convince firms to join networking activities; they must themselves be innovative and initiative-taking; and they must be well-networked within their own country as well as with innovation centers in Europe, Japan, and North America (Cooke 1996, p. 170).

Cooke and Morgan (1993) include as first among the key elements of a "networked region" a thick layering of public and private industrial support institutions. Likewise, Rosenfeld (1997) includes among the necessary conditions for clusters a set of soft characteristics: intensity of networking, social infrastructure, entrepreneurial energy, innovation, and shared vision and leadership. *Institutional thickness*, the term coined by Amin and Thrift (1993, 1994), captures the idea that

interactions among local institutions and between institutions and other local actors strengthen a local economy. However, the mere presence of local institutions is not enough. Recent studies have found that large numbers of institutions can be established for largely separate purposes, and have little or no contact with one another.

All of the elements discussed in this paper—local knowledge, social capital, and institutional thickness—have been incorporated into recent attempts to create networks (Indergaard 1996; Malecki and Tootle 1997; Sommers 1998). What is most striking is the diversity in the origins, histories, local contexts, and purposes of the networks. Each network is distinct in the way in which it is “embedded” in its local (and state) politics, society, culture, and economy (Malecki and Tootle 1997). This is no surprise. In order to be successful, a network, like any institution, must be embedded within the local socioeconomic structures in which it is located (Granovetter 1985; Sabel 1992).

McDowell (1995) and Shaffer (1990) see an explicit role for institutions in community development. “Economically viable communities” provide support for those starting new businesses, monitor public sector activities at all levels, have a community strategic economic development plan, and behave in other ways that show an openness to new ideas. The “supportive structures” include both community development organizations and external support organizations (Wilkinson and Quarter 1995). Most importantly, the institutional structures must be able to evolve and adapt (Barkley 1995; Kraybill and Weber 1995).

V. CONCLUSION

Concern with competitiveness has prompted a more long-term perspective about economic development, and it has shown the significant advantages to be gained from investments in human capital. Policies based on the experience of successful places, then, are not likely to work in situations where networks and active firms are not part of the local culture. Some places are simply more open to new ideas. Regional culture is created and transmitted to future generations through education, training, and acquired experience. Where institutions are present and well functioning for passing on a supportive culture, it is likely to endure. Only active learning regions comprised of active, innovative firms will be able to take advantage of external sources of knowledge. The social processes reviewed in this paper—knowledge networks, social capital, and institutions—may be more important to regional and local economies than the traditional considerations of economic development.

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