



Some Notes on Institutions in Evolutionary Economic Geography

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abstract

Within the evolutionary economic geography framework, the role of institutions deserves more explicit attention. We argue that territorial institutions are to be viewed as orthogonal to organizational routines since each territory is characterized by a variety of routines and a single firm can apply its routines in different territorial contexts. It is therefore meaningful to distinguish between institutional economic geography and evolutionary economic geography as their *explanans* is different. Yet the two approaches can be combined in a dynamic framework in which institutions coevolve with organizational routines, particularly in emerging industries. Furthermore, integrating the evolutionary and institutional approach allows one to analyze the spatial diffusion of organizational routines that mediate conflicts among social groups, in particular, those between employers and employees. An evolutionary economic geography advocates an empirical research program, both qualitative and quantitative, that can address the relative importance of organizational routines and territorial institutions for regional development.

Over the past decade, evolutionary economics has found its way into the field of economic geography (see, e.g., the special issue on evolutionary economic geography in *Journal of Economic Geography* 2007). Evolutionary economic geography attempts to explain the spatial distribution of economic activities from the underlying industrial dynamics of firms. Competition among firms takes place on the basis of the firms' specific organizational routines, which have been built up in the past. As we argued earlier (Boschma and Frenken 2006), such an approach can be distinguished from an institutional-economic approach to economic geography in which the spatial differences in economic activities are attributed to institutional differences among territories. Although it is sympathetic to an evolutionary approach in economic geography, MacKinnon et al.'s (2009) article questions the usefulness of our distinction between institutional and evolutionary approaches in economic geography. The authors plead for a synthesis between the evolutionary and institutional approaches, in particular, so as to be able to address the role of power conflicts and institutions in regional development.

152 In this commentary, we clarify how we fit institutions into our framework on evolutionary economic geography. Our basic argument holds that territorial institutions are to be viewed as orthogonal to organizational routines in that each territory is characterized by a variety of routines and a single firm can apply its routines in different territorial contexts. We further explain how power conflicts are part and parcel of organizational routines and thus are an integral part of evolutionary economic geography. We conclude that it is useful to distinguish between institutional and evolutionary approaches because their *explanans* is different. Yet we believe that the role of institutions should be included in evolutionary studies in economic geography, and we explain how that may be achieved.

Routines and Institutions

One of the constitutive concepts in evolutionary economics is that of organizational routines. Firms compete for market shares on the basis of their specific routines that they built up and improved upon in the past. Routines have two basic features (Nelson and Winter 1982): (1) cognitively, routines act as a mechanism to coordinate the collective skills of employees ("routines as organizational memory"), and (2) politically, routines act as a mechanism of internal control ("routines as truce"). The evolutionary approach to economic geography that reasons from organizational routines differs from institutional approaches to economic geography that reason from territorial institutions (Martin 2000; MacKinnon et al. 2009). The latter approaches often tend to view institutions as durable structures that are specific to territories (at whatever spatial level). Rather than view the behavior of firms as determined by the firms' routines inherited from the past, such institutional approaches emphasize that territorial institutions have a strong impact on firms' behavior, particularly, with regard to interfirm networking and industrial relations. From an evolutionary perspective, the primacy of institutions in economic geography is problematic for two reasons.

First, even though evolutionists recognize the existence and importance of territorial institutions, such structures are deemed to be too loose to determine the behavior of firms and industrial dynamics. For example, the degree of local networking has been shown to be uneven among local firms in clusters even though the firms are subject to the same territorial institutions (Giuliani 2007; Boschma and Ter Wal 2007; Morrison 2008). Some cluster firms are highly connected to the local knowledge network, while others are weakly connected or not connected at all. This variety can be understood from the fact that most institutions are nonbinding and so general that specific effects at the firm level can still vary greatly. In addition, a single firm may apply the same set of routines across

different territories without denying adaptations to local circumstances (Kogut and Zander 1993; Winter and Szulanski 2001; Wrigley, Coe, and Currah 2005). The ability of firms to replicate their routines across different territorial contexts is one of the main constituents of competitive advantage. In short, organizational routines and territorial institutions are orthogonal to one another.

Second, evolutionary scholars have emphasized the importance of sectoral institutions coordinating economic and innovation activities within complex supply chains and crossing territorial boundaries. In many sectors, specific institutions have been developed over time concerning the quality of products, price setting, wage setting, entry requirements, technology standards, and subsidies. In the community of evolutionary economists, the primacy of sectoral institutional analysis is exemplified in the turn from research on national systems of innovation (Lundvall 1992; Nelson 1993) to research on sectoral systems of innovation (Edquist 1997; Malerba 2004) in the mid-1990s. What is more, there is some systematic statistical evidence that most of the variance in innovative patterns of firms is explained by sectoral, rather than regional, specificities (Breschi 2000).

Taking an evolutionary perspective on the spatial dynamics of firm-specific routines, we expect the effect of (territory-specific) institutions on routines to be small as firms develop routines in a path-dependent and idiosyncratic manner. These routines determine to a large extent the locational behavior of firms, as well as their interactions with local and nonlocal firms (Stam 2007). Institutions may still explain some part of the interregional variety of routines, though. For example, it has been found that the production techniques of plants (which can be assumed to correlate strongly with organizational routines) in some U.S. manufacturing industries were more similar within than across regions and that these regional differences are persistent along technological trajectories (Rigby and Essletzbichler 1997; Essletzbichler and Rigby 2005). This sustained variety may be attributable to region-specific institutions but may as well be the outcome of processes of routine replication among firms through spinoffs and labor mobility. It is up to empirical research to demonstrate whether institutions affect firms or not and, if so, at what levels of spatial aggregation. Therefore, we have to be cautious not to take their effect for granted and to measure their relative importance (among other factors) case by case.

Power

The two sides of organizational routines (as memory and as truce) acknowledge that routines act both as cognitive coordination devices and as control mechanisms. In their critique on evolutionary economic geography, MacKinnon et al. (2009) are correct that most evolutionary scholars have emphasized the cognitive dimension of routines. Yet the second political dimension has always been part and parcel of the evolutionary program both in its formative stage (e.g., Rosenberg 1969; Nelson and Winter 1977) and its subsequent elaboration in specific models (e.g., Marengo and Dosi 2005; Reinstaller 2007). Therefore, we believe it is straightforward to incorporate the political dimension of routines in an evolutionary approach to economic geography.

A specific tradition in evolutionary economics that tends to be overlooked by institutional economic geographers who are interested in industrial relations among employers and employees concerns the studies on innovation trajectories. Nelson and Winter (1977, 56–57) wrote of *natural trajectories*, which they described as

heuristics that apply when a technology is advanced in a certain direction, and payoffs from advancing in that direction that exist under a wide range of demand conditions. We call these

directions “natural trajectories”, where heuristics refer to “beliefs about what is feasible or at least worth attempting.”

Nelson and Winter (1977) argued that many trajectories are driven by the logic of *mechanization* of the production process to reduce wages by codifying the tacit knowledge of employees, which lowers their bargaining power within the labor market. Along such trajectories of process innovations, scale economies are increased by an increasing division of labor in production on the basis of standardized production routines. The standardization of product designs facilitates the introduction of standardized production routines.

154 The notion of natural trajectories introduced by Nelson and Winter (1977) is clearly in line with the product life-cycle theory as a core model in evolutionary economics. In this model, industrial dynamics are driven by cost competition through process innovation among heterogeneous firms (Klepper 1996). Because larger firms have more incentives to invest in process research and development (R&D) than do smaller firms and can spread process R&D investments over more production units than can smaller firms, industrial dynamics has a built-in tendency toward oligopolistic market structures with increasing barriers to entry and decreasing real wages. Outsourcing of production, then, can be viewed as the geographic extension of the concept of “natural trajectories” involving the replication of routines across territorial institutional boundaries.

An evolutionary economic geography approach, then, can start from the study of the conflict of interests between capital and labor within firms as they resolve such conflicts differently using different routines. One question is how the diffusion of such routines among firms within and across territories can be explained. Another question is under what conditions such a diffusion process leads to an institutionalization of routines at particular territorial or sectoral levels. Note that such an approach can be easily broadened to include any stakeholder in the firm. By doing so, the political dimension of routines (as *truce*) can be incorporated in the evolutionary economic geography framework as described in Boschma and Frenken (2006).

Institutional Change

Another way to demarcate the role of institutions in an evolutionary economic geography framework is to explain the dynamic interplay between industrial dynamics and institutional change (Freeman and Perez 1988; Boschma and Lambooy 1999; Boschma and Frenken 2006). There is increasing awareness that institutional change is required to enable the emergence of new industries and the revival of mature industries. We agree with MacKinnon et al. (2009) that the capacity of actors to change institutions through collective action is crucial for regional development, particularly regarding emergent and declining sectors. In this context, Nelson (1995) suggested that institutions should be thought of as coevolving with technology and markets. Murmann (2003), for instance, showed that some crucial institutional transformations were required before the new dyestuff industry could take off and make Germany a world leader in carbo-chemicals in the 19th century. In other words, institutions coevolve with the development of industries. When new institutions are formed alongside new industries, they fulfill a specific need, but once they are firmly established, they may obstruct new developments, because of inertia and institutional hysteresis (Setterfield 1997). For instance, powerful special-interest organizations may take over an economy and slow down the capacity to reallocate resources to new activities (Grabher 1993). To avoid this situation of negative lock-in requires institutional change (Hassink 2005).

The analysis of institutional change may be incorporated into the Window of Locational Opportunity (WLO) concept (Storper and Walker 1989; Boschma and Lambooy 1999), which provides an evolutionary framework to explain the spatial formation of industries. As a first step in the analysis of the spatial formation of new industries, the WLO concept aims to define and determine the probability of regions developing a new industry. With respect to institutions, one expects that basic institutions like markets, property rights, and a judicial system (among others) are a prerequisite for the development of any economic activity. In other words, countries and regions that lack these basic institutions have a probability close to zero of developing new industries. But apart from these basic institutions, it is difficult to think of territories that are well endowed with favorable institutions before a new industry starts to develop because existing institutions generally do not fit with the specific features of a new industry. In other words, we do not expect that the spatial distribution of institutions can explain where a new industry will grow and develop. What is crucial, though, is that such institutions are created deliberately to support and sustain the further growth of the new industry (Freeman and Perez 1988). These supportive institutions often come into existence where the specific demands for them have emerged, that is, in those places where the new industry started to develop. They are often implemented at the national scale by public intervention, but they may also develop at the subnational level or even at the supranational level.

This leaves us with some fundamental questions that need to be addressed in evolutionary economic geography. We have to assess carefully the relative importance of institutions for the geography of emerging industries. As we stated earlier, we do not expect that the institutional variance across regions will explain the emergence of industries across regions. Rather, if institutions play a role, it will be more often in an endogenous manner as entrepreneurial firms, consumers, and governmental officials engage in collective action to establish new institutions. Yet it is up to empirical research to determine whether supportive institutions, which come into being as an outgrowth of the development of a new industry in a region, really made the difference. Other evolutionary mechanisms, such as localized knowledge spillovers or spinoff dynamics, provide alternative explanations for why a new industry developed in a region and not in other regions. So institutions may not play a decisive role or only an indirect role by stimulating localized knowledge spillovers and spinoff dynamics (Boschma and Frenken 2003).

Equally important, an evolutionary economic geography is in need of specific institutional theories that supplement the core of industrial dynamics. In particular, theories of collective action need to be considered to explain more systematically under what conditions regions or countries are more likely to adapt their institutions to seize opportunities provided by new sectors and under what conditions institutional adaptation fails to take place (Maskell and Malmberg 2007).¹ It is here that agendas of evolutionary and institutional approaches clearly meet (MacKinnon et al. 2009). Of particular interest in the theoretical context of evolutionary economics is the question to what extent

¹ In this context, the study by Strambach (forthcoming) is worth noting. She argued that institutional systems are not necessarily coherent in themselves but are subject to institutional *plasticity*, meaning that a range of options for new paths are open within the overarching institutional system. Creative agents can deviate from the established path in a deliberate and purposeful manner, creating new institutions but not necessarily breaking with the institutional system. As Strambach showed, plasticity explains how the customized business software sector in Germany could develop in an unfavorable and incompatible institutional setting at the national level.

institutions can be imitated within the same sector across different territorial contexts (Saxenian 2006; Wójcik 2006) or within the same territory across different sectoral contexts (Hall and Soskice 2001).

The empirical research program that we propose necessitates methodologies that can handle the analysis of the interplay between various mechanisms at various spatial levels. Methodologically, it means that case studies are appropriate (e.g., Grabher 1993; Gertler 1997; Murmann 2003; Strambach forthcoming). At the same time, new statistical approaches have been developed to detect complex patterns in spatial data as they have been applied to organizational ecological analysis (Bigelow, Carroll, and Seidel 1997; Stuart and Sorenson 2003; Wezel 2005), survival analysis (Boschma and Wenting 2007; Klepper 2007; Wenting 2008), and social network analysis (Giuliani 2007; Glückler forthcoming; Hoekman, Frenken, and Van Oort 2008). We believe that the further development and deployment of such approaches is important to render empirical studies in economic geography more comparable, transparent, and cumulative. This belief has been expressed repeatedly in our field without denying that qualitative research remains pivotal to any social science discipline (Markusen 1999; Martin 2000; McCann 2007).

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Conclusion

We argued that territorial institutions are to be viewed as orthogonal to organizational routines in that each territory is characterized by a variety of routines and in that a single firm can apply its routines in different territorial contexts. It is therefore meaningful to distinguish between institutional and evolutionary approaches because their main *explanans* is different. An evolutionary economic geography advocates an empirical research program in which the relative importance of organizational routines and territorial institutions can be addressed using both qualitative and quantitative approaches. It is here where we foresee a promising synthesis of institutional and evolutionary approaches in economic geography.

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