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Clusters, localized learning and policy

Conversations between North American and European Scholars

Mark Lorenzen

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Introduction

This paper is concerned with the question of policy in a cluster perspective: When and why would policies at all be necessary for clusters, and is it possible to determine ultimately the elements that are appropriate for stimulating localized learning? The paper rests upon the assumption that in the current early state, an overly narrow theoretical or empirical focus upon a few properties of learning, competitiveness, or geographical localization will be counter-productive to the development of the debate on cluster policies. Hence, rather than struggling to offer unambiguous definitions of clusters and cluster properties, the paper lists a range of insights, reflections, and suggestions.

These insights and suggestions are offered by prominent North American and European scholars from within the economics and geography fields. During two seminars in Mississauga (Canada), September 16-17th, 1999, and Venice (Italy), October 2, 2000, a total of 27 economists and geographers from Sweden, Denmark, Italy, Canada, and the United States discussed a broad range of issues under the heading "Competitiveness, localized learning and regional development policies". The initiative for the seminars came from a Nordic research group headed by professor Peter Maskell, Copenhagen Business School, and financed by the Nordic Centre for Spatial Development (NORDREGIO). The seminar in Canada was

convened by professor Meric Gertler from University of Toronto, while the seminar in Venice was convened by dr. Margherita Turvani from Venice University. A list of participants to the seminars is enclosed.

The discussions at the seminars were wide-ranging indeed. By necessity, much of the seminars consisted of discussions of the difficult basic questions of learning, competitiveness, and localization, not directly related to policy.

Thus, Section I of the paper, "Clusters, learning, and competitiveness", summarizes what was said on these issues. It touches upon the importance of learning for competitiveness, and explores the processes of learning, discussing aspects of cognition, as well as the dependence of monitoring social capital and geographical proximity. The section also contains an elaborated discussion of division of labor and of knowledge, summarizing some viewpoints expressed at the Venice seminar on external learning economies and diseconomies arising from diversification of clusters.

Section II, "Localized learning policies", sums up some issues more directly aimed at formulating policies. Here may be found many insights into some basic problems of formulating regional policy aimed at promoting learning (technologically and institutional[1]) as a foundation for local economic development. The section offers some general observations regarding the need for and dangers of policy, policy levels, and who the policymakers may be. The section moves on to outlining some central tasks for localized learning policy. Whereas the seminars contained long discussions of the scope and role of policy, there was less concrete advice of what policy could and should contain. However, as stated by Fiorenza Belussi at the Venice seminar, localized learning policy clearly is much more than technology policy. Indeed, the part of Section II that presents what was said at the Venice seminar does contain a brief – and non-prioritized – list of possible tools available for policymakers.

[1] Throughout the seminars, some confusion persisted as to the use of the term "institution". In the present paper, this term is not applied in the Williamsonian way (Williamson 1975; 1985), but rather used for institutions in the "old" sense (meaning patterns of social conventions, norms, habits, routines, etc.). The term "organization" or "organizational form", on the other hand, is applied to firms (i.e. Willamsonian institutions), but also agencies and associations of various kinds.

Even if the conversations in Mississauga and Venice pertained to clusters, localized learning, and policy, naturally, they differed in content and style. To preserve the internal consistency of the conversations, what the conversations at the Mississauga and Venice seminars offered upon "Clusters, learning and competitiveness" and "Localized learning policies" is listed in turn within each section. The preservation of the depth of the conversations of course implies that the paper may repeat some aspects or personal viewpoints where necessary.

The paper cannot possibly encapsulate all the themes discussed during the seminars, nor account for all the remarks and viewpoints expressed by the participants. Instead, the paper highlights selected issues, and seeks to represent some of the differing viewpoints. Of course, these have been interpreted to some degree by the reviewer who is the, ulimately, responsible for what follows.

Section I. Clusters, learning, and competitiveness

The conversations in Mississauga

Regional competitiveness based upon learning

Learning and change

A basic definition that was discussed was, of course, "learning". Some suggested that this notion should be used about a positive development – at the firm and regional level – while "change" should denote a development, which is not necessarily positive. In general, at the Mississauga seminar, change and learning were used about a wide span of processes, ranging from purely technological innovations to emergence of new governance forms, practices, and cultures.Learning and regional growth

Ann Markusen noted that a central concern to the whole debate is the fact that some learning – notably, technological innovation – is localized, i.e. place-bound, while some other is done across distances and national borders. It is certainly interesting that learning may reside within regions. However, she drew attention to the fact that within some industries, there are so few firms that they by necessity would seem localized when studied. This is, however, another type of regional sectorial specialization than when a range of small sized firms within the same sector *grow* within particular regions, and have a positive impact on the economic development of those regions.

Further, Ann Markusen was of the opinion that empirical evidence shows that ICT is making fewer and fewer industrial activities localized. It remains to be seen whether learning and innovation will also be placeless. However, Ann Markusen herself acknowledged that the possible placelessness of some activities (e.g. via e-mail) have not lessened the need for inter-personal and inter-organizational *trust* — maybe it has even increased it.

Anders Malmberg and AnnaLee Saxenian made the general point that we should regard industrial activities, institutions, and organizations, as first and foremost groupings and networks of *people*, and many activities remain localized, because people to a certain extent are place-bound. This observation applies to systems of firms, as well as single, integrated, firms. AnnaLee Saxenian, Anders Malmberg and others referred to systems of specialized firms, where local linkages to institutions and suppliers play a huge role. Ann Markusen also referred to large firms with huge internal R&D and innovation. Even for such firms, *where* their qualified labor wants to live makes a huge difference for their location of activities. It was noted that in an era with growing possibilities for managing activities across space – for small as for large firms – localization may be determined by a *combination* of necessary linkages to other firms and organizations with a recognition of which places highly skilled labor finds attractive.Knowledge and learning processes

Technical knowledge and skills

Another general theme at the Mississauga seminar was *knowledge* of various sorts, and quite some effort was devoted to defining it.

First, the Nordic arrangers of the seminar pointed to a basic problem pertaining to learning: Division of labor and cognitive distance. What can be said – theoretically and empirically – of interactive learning processes between very dissimilar bodies of knowledge? How can we understand and measure cognitive distance within the conversation of localized learning? Peter Maskell elaborated on these questions by asking whether there might be a "paradox of learning vs. competitiveness". With specialization, increased division of labor, and development of a more specialized knowledge base arises greater internal efficiency as well as scope for flexible cooperation with other specialized firms, but also – ceteris paribus – a greater cognitive distance to other firms, making communication and interactive learning more difficult. The *cost* problem of cooperation and trade between specialized firms have been treated by e.g. Williamson as transaction costs, whereas the *learning*

problem of cooperation and communication between specialized firms is only now beginning to be treated by scholars (e.g. Langlois and Robertson's "dynamic" transaction costs).

AnnaLee Saxenian took a focus on skills and suggested as a remark to this paradox that there may be no great cognitive distance between managers of firms that have specialized through spin-offs within the same industry. And spin-offs are a very common way of specialization, occurring as a result of growing market (cf. Adam Smith). For such spun off firms, even if their technologies would seem very different to outsiders, they still have common knowledge in terms of skills, and this may be more important than cultural differences. In the US, examples can be given of immigrants (Indians, Chinese, Taiwanese – known to have very different cultural backgrounds, including ways of running businesses) who seem to communicate well if they have been a part of the same industrial cluster for a period, while people originating from the US and from the same civic background may have difficulties communicating about differing areas of work (Saxenian, A and Chuen-Yueh Li, forthcoming). A discussion then arose about what influences cognitive distance apart from skills and technology. Managerial culture and style was mentioned, and it was debated what is meant by such a culture. For example, is it determined by the vision of the entrepreneur, his/her social or cultural background, or by "logics" of later features of the firm like its size?

Behavioral knowledge and social rules and conventions

Meric Gertler suggested that technical rules are not enough to coordinate businesses – tacit, social, rules are necessary. Thus, cognitive distance pertains to more than differing bodies of technical knowledge (skills patents, etc.) – it also regards behavioral knowledge or "culture". Mark Lorenzen emphasized that a relevant research focus is the cases where codified, technical knowledge *clusters* with tacit behavioral knowledge (social rules, conventions, communicative codes, etc.). Relevant frames for such clustering could be firms – or production systems (or, at a less fruitful level, nation states or regions).

It was agreed that identifying patterns in such knowledge clustering as well as uncovering causal factors is a major and relevant research task. Mark Lorenzen noted that an interesting aspect to geographers is that tacit knowledge seems to be significantly less geographically mobile than codified (technical) knowledge, and *that* may be an explanation for persistent localization of some production

and innovation processes. Geographical production systems, districts, etc. (where firms depend upon tacit knowledge (local social conventions and communicative codes) for utilizing technical knowledge and skills (coordination of industrial activities) should be seen as special, *localized*, cases of the *general* process of knowledge clustering. Revealing patterns of knowledge clustering and uncovering where it is localized would be central to finding out *why* localization may be central to some innovation.

Communities, monitoring, and social capital

The importance of communities to business life

With the element of behavioral knowledge and culture entered the important notion of social coordination and cohesion – transcending business life, but certainly having a huge impact upon it. There was quite some debate as to the degree to which *social capital* – i.e., social networks and norms – in civic communities is important for business life. It was agreed that there is empirical evidence that some production systems to a large degree rest upon a social coherence and coordination facilitated by social networks and conventions. In this context, Ann Markusen stressed that regions with conventions that "accept failures" (are less punitive to entrepreneurs who go bankrupt or otherwise experience problems) are the most innovative, because they facilitate trial-and-error learning. Within production systems – and society as a whole – social conventions and norms that lead towards social trust and makes failure socially acceptable facilitates sharing of knowledge and experimentation, respectively, and is thus of great relevance to learning (the Scandinavian societies that "pick up those who fail" was mentioned).

AnnaLee Saxenian inferred that the *common knowledge* of people working within the same industry is a central element of communities, much more than direct supplier relations. This means that conventions are important, but also that e.g. knowledgeable venture capitalists are in fact central agents of communities.

A question is when social capital and cohesion of communities is of *less* importance. Ann Markusen gave examples of MNCs – not necessarily large ones – coordinating activities across space with the aid of ICT, and saw this as a sign that the role of communities is generally diminishing. Examples of firms moving out of Silicon Valley, but maintaining links to Silicon Valley-based firms were also mentioned. AnnaLee Saxenian maintained that communities are still at the very heart of many production systems, and again gave

examples of a "technical" community amongst entrepreneurs within Silicon Valley, even amongst those of very different cultural origins. Over time, this community – and hence the common knowledge – has become so strong that even Taiwanese immigrants to Silicon Valley who have returned home and entrepreneurs who have remained in Silicon Valley

continue to cooperate and communicate across great geographical distances. AnnaLee Saxenian was thus of the opinion that cognitive distance may not be a great problem within many industries, even with increased specialization, nor across distances.

Jack Smith mentioned that firms may be affected much by cooperation with (or joint ventures with) firms outside their community (particularly MNCs), and thus lose some of their sense of belonging to the community. Staffan Larsson pointed out that in some small economies or industries, cooperating with outside firms may be necessary for *all* firms that grow beyond a certain size. AnnaLee Saxenian agreed, but saw no contradiction between cooperating with outsiders and maintaining links to local firms. If a firm is completely outward oriented, eventually it will leave the region — there must be some crucial *local* links that make the many firms that do *not* leave want to stay within their "original" community.

The importance of geographical proximity

Localized communities

Again, what is particularly interesting for geographers is that some communities seem to be place-bound (and this has implications for businesses). In spite of AnnaLee Saxenian' point about the Taiwanese workers, we still know little of how elements of communities may be transferred to new places with people. Mark Lorenzen added that nor do we – as economists and/or geographers – know much about the general processes through which they *emerge* in particular places. Telling case stories of how cultures function in different places is not enough.

Here, Peter Maskell offered the insight that the much acclaimed trust amongst Danish managers (and between managers and workers) is not just an inherited common good – it is ongoingly created in the Danish "villages" (in a partly real, partly metaphorical sense) where people interact over time and sustain networks, and this is a result of the very low geographical mobility of Danish workers and managers.

Mark Lorenzen suggested that culture is first and foremost *network-specific*. David Wolfe inferred that in Canada, networks and

industrial culture is confined within industrial sectors. For example, the plastic sector differs much from the telecom sector, both in terms of the agents that interact, the way they interact, and their norms. The former is small-scale, with frequent networks and an experimental approach to innovation, whereas telecom is large-scale, with fewer key agents, and a less experimental approach to innovation.

In some cases, where the *networks* in question are localized (place-bound), *communities* are also localized (place-specific). The spatial scales differ according to viewpoint: Communities and culture is not only a national phenomenon, but may be meaningfully studied at the level of regions or locales. Localized culture can only be achieved by "being there" in Meric Gertler's terms, i.e. participate to the particular networks where it can be *learned.* When agents are brought together in a network (in space) for a period, they have the opportunity to learn a common culture. Thus, while technical innovation may take place between firms across space, cultural learning is much more complex and difficult (hence, in the cases where cooperation and technical innovation depend upon culture, these processes may also be sensitive to distance). For example, the aforementioned firms that moved out of Silicon Valley while maintaining contacts to Silicon Valley firms across space were only capable to do so because they and their partners have had the opportunity to learn a common culture *while they were* "*there*": They built up some norms, conventions, or other aspects of community life while all present in Silicon Valley. Mark Lorenzen also gave an example of Danish furniture SMEs that used fax or phone more frequently to interact with their *closest* neighbours, while paying personal visits to non-local suppliers – because their belonging to the same local community functioned as a communicative base that allowed them to exchange even sophisticated information with other locals through phone. A tentative conclusion from this is that because of lower cognitive distance within local areas, innovations may be localized (agglomerated) – in industries where qualified suppliers can be found locally. In cases where firms can find qualified suppliers only non-locally, even in other countries (or where there are some other reasons for using non-local suppliers, e.g. due to ownership), they will have to bear the costs of overcoming cognitive distance.

Betsy Donald drew attention to her experience that low mobility – people being isolated in the same place over time – does not necessarily lead to creation of a culture promoting social experimentation and technical innovation. In some local communities,

social norms and conventions may be very prohibitive to new ideas (as well as newcomers). This means that social capital can also have a negative economic value.

Social capital, evolution and space

Again, it was noted that history matters for geography. As mentioned, geographical distance matters less for cognitive distance in the case of firms moving out of Silicon Valley, because they may already have built common communicative knowledge together with the firms that remained in Silicon Valley. Here, linkages were *maintained* over distance. Meric Gertler's work on cross-border supplier relationships treated linkages that were *initiated* over distance, and hence less successful.

Most participants to the seminar agreed that institutions evolve over time. As Ann Markusen put it, it takes time to network. The size of the costs that have to be sunk into inter-firm trust and communication and the general time compression diseconomies of institution-building of course has great importance for which industrial activities can be footloose and which remains place-bound. It was discussed whether there is a "size split" here: Large firms are more footloose that small firms. Is this because they undertake other types of activities that *must* be carried out across distances (for example, because the only qualified suppliers or customers must be found in other countries), or do they posses more resources to carry out all types of activities across space (for example, more communication skills learned internally in the hierarchy, financial resources, ICT, or simply, time and dedication)? An "industry split" was also discussed: OECD's perspective of a Global Village obviously pertains mostly to hi-tech industries. Generally, the opinion of the participants differed much here. For example, while Ann Markusen maintained that ICT will make a huge range of activities placeless, David Wolfe did not put great faith in the Global Village vision.

The conversations in Venice

Regional compe titiveness based upon learning?

Advantage through uniqueness

The Scandinavian group embraced a Penrosian resource-based perspective on competitiveness. In this perspective, a regional cluster's *uniqueness* is a necessary (if not sufficient) precondition for its competitiveness. What can easily be imitated cannot form a basis for sustained competitiveness, and cost-based advantages are under threat of imitation from e.g. low-cost developing countries. On the other hand, when firms and other agents in a cluster are capable of constantly changing capabilities, they are less threatened by imitation. Consequently, learning – in a broader sense than technological innovation – is ultimately a way to build and sustain competitiveness in the long run.

The ability of clusters to *combine* the different types of knowledge and learning taking place in different local firms, with low cognitive costs, may strengthen their flexibility, adaptability and competitiveness. Gabi Dei Ottati noted that in the Italian industrial districts that are most successful, the local agents are – individually and as a system – *introducing new codified knowledge while preserving and in fact resting upon (at least the core part of) their existing contextual (tacit) knowledge*.

Cost-based competitive advantage

Antonio Calafati observed that comparative advantage based upon knowledge – maintained over time by the ability to learn – ought not to be seen as the *only* source of competitiveness of clusters, as a range of factors (labour market workings, capital accumulation, financial strength, etc.) are also of central importance. The origins of the success of many Italian "industrial districts" cannot be traced back only to comparative advantages in knowledge, but rest upon other external economies.

Knowledge and learning processes

The content of learning processes

The outset for the discussions at the seminar was the participants' common recognition of the usefulness of a theoretical perspective emphasizing *learning* as an explanation for economic development. Not surprisingly, there was some disagreement as to the exact content

of this central notion. However, processes of knowledge exchange, creation, and destruction were considered.

Knowledge exchange

On knowledge exchange, Fiorenza Belussi said that one aspect of learning is the transfer of already existing knowledge from one pool to another (typically, from one firm to another) – diffusion, socialization, monitoring and imitation of practices (in the latter case, knowledge is often tacit). Antonio Calafati added that such *learning by interacting* – alongside with *learning by doing* or *learning by thinking* – should be understood as an aspect of social interaction. It is often concerned with elemental units of information about markets (e.g. availability and price of input, technological innovation) and external markets (markets for final commodities, etc.). Social interaction, and the learning that it entails, ought not to be mistaken, however, with formal co-operation.

Knowledge creation

Fiorenza Belussi noted that much knowledge may not be exchanged as such, but created through the very process of co-operation and interaction. When different agents exchange information or knowledge, original, new knowledge may be created in the process. This is characteristic of the knowledge spillovers pointed to by Marshall (1919; 1920) and modeled by Krugman (1991; 1995). Such knowledge spillovers partly explain increasing returns of clusters, because firms within clusters thus may raise their exporting abilities through specializing further and "filling the global circuit of knowledge". Of course, interactive learning is not the only source of new knowledge in clusters. Antonio Calafati stressed that *learning by doing* and *learning by researching* – internal organizational learning by researching (R&D) – is of utmost importance. Margherita Turvani offered a general insight here: It is very difficult for an outside observer to pinpoint the new knowledge created within firms or clusters, as the whole idea of knowledge that we are embracing is somewhat social constructivist. It is very difficult to compare and assess ex ante what new and innovative knowledge really is.

Knowledge destruction

Concerning knowledge destruction, many researchers emphasize the importance of not sticking to old knowledge and consequently being locked in old ways. This concerns firms and products, but also cluster paths. Margherita Turvani reminded the seminar participants that even spontaneous order found within many clusters does not come for free

– there are huge "cluster-specific sunk costs" in terms of effort and opportunity costs.

However, Margherita Turvani was of the opinion that even if "unlearning" is a catchy term, it is not very precise for capturing the ability of some agents, organizations, and clusters, to adopt to new situations. This is because it is very difficult for agents to unlearn. History surely matters, as we cannot remove heritage. Gabi Dei Ottati agreed that unlearning may not be the most appropriate term for learning while avoiding lock-in. Rather, we should use a term denoting a capacity to *change* rules, not forget them.

Communities, monitoring, and social capital

Knowledge spillovers and monitoring

Peter Maskell inferred that the processes of interactive learning and exchange of knowledge are closely related to what Marshall (1920) encapsulated in his fifth volume of Principles of Economics. In regional clusters, agents continue to rest upon a common knowledge base, while expanding their knowledge of markets and of each other. With the knowledge of common features of the cluster – of what is "normal" returns within this industry, for firms of a similar type – they learn from *monitoring* the outcome of each others' returns to idiosyncratic investments under uncertainty (for example, others' experiments with organizational forms, products, marketing, etc).

This is a different process than mere imitation, it is *an information flow arising when knowledgeable agents monitor others' investments under uncertainty.*

The importance of social capital

Margherita Turvani added that the shared knowledge of what is "normal" within the cluster upon which monitoring rests, is an important dimension of what "local" really means. Agents with a shared cognitive frame are proximate in a systemic manner. Agents without shared knowledge cannot meaningfully monitor each other. Gabi Dei Ottati referred to such shared cognitive frames as "cultural proximity". Peter Maskell pointed out that this is very related to the concept of "social capital", which seems to keep surfacing in debates about clusters and localized learning. He asked whether this concept may be useful, or whether it represents yet another theoretical "black box" in the social sciences. Mark Lorenzen agreed that there is some

danger in ascribing an economic "value" (which may be hard to measure) to subtle socio-cultural notions (which may be equally hard to measure), but in order to demonstrate – particularly to economists – the importance of the social tissue of economic systems, it may be useful to lump *social networks and social conventions* together in one concept. Gabi Dei Ottati inferred that social capital thus defined should be seen as central to the functioning of clusters. Margherita Turvani observed that even if it may be popular to talk about "social capital", social networks and conventions should not be collapsed into one analytical category. Quite the opposite: It is useful to make an analytical distinction between social networks and what is *contained* in these networks – in other words, social networks as channels of exchange of products, information, finance, etc.

An important function of social networks and conventions is that *trust* can be formed upon them – useful not just for social interactions, but for professional purposes. To Gabi Dei Ottati, trust itself represents a collective capital. Fiorenza Belussi saw institutions like social networks and conventions as central for the economic performance of clusters, because the institutional set-up basically is a means for problem solving. Hence, it also functions as a mechanism for transmission of information and knowledge. Institutions thus influence interaction, e.g. through transaction costs. Fiorenza Belussi however also reminded the seminar participants of the possible negative value of social capital: When social networks consist of strong ties, social capital may support closeness to learning, Mafia, etc., rather than learning and competitiveness.

Concerning networks, Margherita Turvani stated that social processes – like monitoring and learning – always depend upon the weakest parts of the "chains", the social networks. Some social ties – in Granovetter's (1973) terms – may thus block information and learning. Mark Lorenzen agreed that in theory this is true, but real life experience of many clusters has demonstrated that concerning information on internal affairs, social and professional interactions are often so dense that information has many alternating ways of passing by "the weak parts". Information "gatekeepers" or "bottlenecks" may thus be of less importance.

Concerning conventions, Gabi Dei Ottati pointed to the fact that the boundaries of some clusters like the Italian industrial districts are not politically nor geographically defined but economically and socially defined – in terms of *membership*. Here, the agents that feel they are economically and socially a part of the system. Mark

Lorenzen added that norms of reciprocity and sense of belonging are related to the convention element of social capital, but go beyond it.

The importance of geographical proximity

The importance of geographical proximity

Geographical proximity of agents within a regional cluster affects the efficiency of monitoring in terms of information costs. As noted by Peter Maskell, monitoring is simply difficult to achieve if agents are not so geographically close that they can observe each other. In some industries, observation may happen without proximity. For example, agents within the nuclear power plant industry (which cannot be clustered geographically, as the single plants need to be in their respective market areas) still monitor each other and learn, because they are so few and interaction across great distances is a part of their profession. Professionals within this industry are "local" in a purely systemic sense, not a geographical. However, their monitoring is probably not so efficient as in regional clusters like the Italian districts, and it is unlikely to encompass tacit knowledge to a similar degree. Nuclear industry professionals may know what goes on, but not why and how. Compared to agents within a regional cluster, they lack cognitive institutions to make sense of their observations.

Anders Malmberg added that agents that are interested can monitor anyone, anywhere, when they are connected in networks – but it takes effort. For example, managers may monitor other managers within the same sector or trade, but only when they are co-localized in the same area can they monitor as a part of daily life and everyday experience. In fact, locally, agents can't help noticing! What takes place in the local milieu is spontaneous, automatic monitoring, regardless of whether agents may know it or want it.

In local communities, the boundaries between private and business life often blur, as information and knowledge spread within and between them both. This is what is unique to the local, and some of these processes may be found within some regional clusters. Francesco Trombetta supplemented that in localities like cities or some regional clusters, agents are provided with knowledge through some functions of their daily life that they can re-use for other purposes. If the daily life and interaction of agents were only determined by their work, and hence by the specialization of the firms in which they were employed, agents would only would only attend "relevant" functions, and interact with the knowledge holders they understand or should use professionally. But in a city, there are many

functions in a limited space, interaction patterns are complex (and sometimes coincidental), the probability of interaction (including coincidental) is higher, and thus also the potential for spillover between knowledge pools.

When cultural and geographical proximity coincide

In regional clusters – most notably, industrial districts – geographical proximity coincides with "cultural proximity" (social capital), thus not only lowering the information costs (in terms of accessing information), but also the cognitive costs (in terms of understanding information) of monitoring. This is because purely local institutions (for example, Marshall's "sense of membership") have emerged, forming an "atmosphere" supporting networking and communication.

Gabi Dei Ottati stated that an explanation of the local nature of institutions is that they emerge as a cumulation of citizens' everyday life. Antonio Calafati added – taking Hägerstrand's perspective – that economic processes have a 'local dimension' because they are unavoidably constrained by physical factors like geographical distance (affecting human actions through influencing energy and time consumption, and creating cognitive constraints and path-dependence in learning). How much "open" a local system may be, it invariably has a core of "local relationships". Francesca Gambarotto agreed that "reason" (in the sense of rationality) comes before "identity", and that the latter depends on the (practical) context of the agents (their relations and interactions). She added that in order to form the basis for institutions, agents' relations need to be symmetrical (other agent need to have the same identity feeling).

Antonio Calafati was of the opinion that "identity" cannot be seen as an explanatory factor of the success of local systems. At any rate, there seems to be no empirical evidence to corroborate the hypothesis that identity has played a general role in the Italian case. On the contrary, one may indicate many towns and local systems that performed very badly from an economic and social point of view notwithstanding a strong cultural identity. Some *particular elements* of an identity may however be important for competitiveness – making some forms of identity more valuable as a type of social capital (Gertler 1995). There are tourist districts, for example, for which particular elements of the local identity have become input in the production of goods and services which have performed extremely well ("landscape" both in South Tyrol and Tuscany is a remarkable

example of an element of local identity turning into a factor of competitiveness).

Some questions were raised about the consistency of social capital within a regional cluster.

Francesca Gambarotto pointed towards the danger of erosion of social capital when a cluster performs well. For example, if an industrial district achieves high degrees of competitiveness and high exports, increased individual firm performance may feed back negatively on territorial identity and social cohesion (e.g. when firms "outgrow" the district and to a larger degree rests upon relationships to outside partners). She stated that even if there may be a huge difference between social identity and economic identity (it seems that there is need to make clear what the concern really is), identity is created through *relationships* (identity is a process, not a stock). Consequently, if economic relationships weaken, so does identity – and in the long run, local social identity may be undermined by a weakening of local economic relations (through increasing globalization of firms' relations).

Anders Malmberg raised the question of new agents with no former geographical belonging (e.g. TNCs) entering into a regional cluster. If the boundaries of e.g. an industrial district is determined by membership – what happens to the system when, for example, a foreign TNC enters through an acquisition of greenfield investment? Gabi Dei Ottati suggested that this does not necessarily disrupt the system – it can in fact strengthen it, and economic relations to the incoming firms can be established. Margherita Turvani however agreed with Anders Malmberg that we do not know much about what happens, if the people in an industrial district are gradually changed – do the institutions remain? This must depend on whether efficient mechanisms of transmission exist. At his point, Peter Maskell reminded the seminar participants of AnnaLee Saxenian's (1999; forthcoming) work on Taiwanese people working in Silicon Valley. After returning to Taiwan, some of them have started up electronics firms abroad while maintaining strong social and economic links to Silicon Valley firms. They are still members of the Silicon Valley district, even if they are not within its geographical boundaries.

Diversification and externalities

Specialization and diversification

The participants to the seminar agreed that clusters are essentially examples of local markets where internal scale economies are less

significant than *external* economies. Peter Maskell suggested that, in a learning perspective, it is central to determine to which degree external *learning* economies are also larger. In which clusters does a configuration with N firms of size S produce more learning than a configuration with only one firm of size N*S, due to the positive learning effects of specialization and division of labor between firms?

The nature of regional specialization is bound to determine whether N firms of size S may learn more than one firm of size N*S. There may be limits as to how different activities can be within a cluster to maintain efficiency and learning. In particular, it matters whether there is a strong *vertical* division of labor (i.e. strong *diversification*) and/or *horizontal* division of labor (less diversification). As Peter Maskell put it, it is interesting indeed whether some regional horizontal and vertical specialization and diversification patterns are

more conductive to monitoring, knowledge exchange, and interactive learning.

The discussions at the seminar identified several both positive and negative external economies (i.e. social costs and benefits arising as unintended consequences of private investments) associated with specialization and diversification. Some of the viewpoints with the largest bearing on processes of learning are summarized in what follows.

Entrepreneurship

A first observation made was that start-up of new firms represents learning. Fiorenza Belussi argued that whereas within a firm, new ideas are often suppressed, in a system of firms, people are given the opportunity to explore their ideas – if not as employees, then as entrepreneurs.

Margherita Turvani reminded the other participants that Smith implied that intensification of the division of labor means that new branches of knowledge arise – what was not earlier an object now becomes one. She sketched out a simplified scenario. Initially, in a non-diversified cluster, there is a high inter-firm division of labor but not of knowledge, meaning that new firms can enter at low knowledge costs. More firms means higher local competition, pushing single firms towards larger specialization to gain a niche with less competition. This lowers competition and heightens entry barriers, but also increases the division of knowledge and thus the costs of co-ordinating knowledge. The intense need for co-ordinating knowledge

signifies structural holes for entrepreneurs to fill. Many services (themselves representing new goods, and new branches of knowledge) should be seen as basically offering re-connection of pieces of knowledge that have been separated by increased division of labor. Peter Maskell added that as vertical specialization depends on the size of the market, the industry and market type of the cluster in question must determine how large the scope for emergence of service firms can be.

Marshallian external learning economies

As pointed out by Marshall, there are often significant external learning economies arising from co-location of similar activities and a mainly *horizontal* local division of labor.

Peter Maskell referred to Loasby's (2000) "neo-Marshallian" view of the *visions* of firms. As a system of visions and ideas is idiosyncratic to a firm, a configuration of many firms performing similar activities can still maintain a diversity of visions. Under uncertainty, a variety of visions is an advantage. Margherita Turvani pointed out that variety facilitates more learning for the single firms, because it is impossible for them to purely imitate knowledge they achieve from others – they will have to adopt it to their own context. In some clusters, horizontal specialization, a variety of visions, plus mechanisms for utilizing this variety is the explanation for their learning efficiency. Of course, the mechanism that derives learning from vision variety is *monitoring* – facilitating organizational learning within single firms on the basis of other firms' experiments. As mentioned, for firms to efficiently monitor each other, it helps to be specialized within the same sector and understand each other.

Smithian external learning economies

According to Peter Maskell, one of the reasons behind increasing returns within clusters is an increasing vertical division of labor, because specialization facilitates *organizational* learning through deepening of knowledge within single firms. Such external learning economies of diversification and vertical division of labor are essentially Smithian.

Other learning economies arising from vertical division of labor were discussed. Anders Malmberg observed that the variety of knowledge bases within clusters with vertical divisions of labor may push and inspire firms to learn through their interactions – what Lundvall calls "user-producer" learning. Regional diversification by co-location of related activities leads to (Marshallian) "localization

economies". Antonio Calafati, however, questioned whether a systematic superiority of learning abilities of vertical division of labor (and the interaction patterns that follow) has really been corroborated empirically. As a matter of fact, this perspective easily forgets that there is also a great deal of learning taking place within vertically integrated firms. Anders Malmberg noted in reply that if co-located activities were unrelated, we should talk of "urbanization economies" instead.

External diseconomies associated with cognitive costs

However, the learning potential of diversification and vertical division of labor may be hampered by costs for overcoming cognitive distance. When firms specialize much vertically, inter-firm coordination and communication may suffer from growing (cognitive) costs arising when firms are so specialized that they may have difficulties of understanding each other, and thus of monitoring as well as exchanging knowledge. Fiorenza Belussi agreed that variety and diversification have a limit, determined by knowledge and technology. Even when technologies are useful in more than one sector, there are many problems of coordination.

External diseconomies associated with institutional mismatch

As pointed out by Mark Lorenzen, regional clusters experience competition amongst local firms for resources. Even if competition for skilled labor may be particularly harsh in clusters with many similar firms, unskilled labor may be utilized by different firms and is often a scarce resource in expanding clusters, whether they are diversified or not. Similarly, there is competition for public resources and funds in most types of clusters.

In diversified regional clusters, local diseconomies may also arise from local power battles over the design of local policies, institutions and public and semi-public organizations and services (for example, labor market regulations and education offer). In Peter Maskell's formulation, institutions favorable for one economic activity may not be favorable for another (the Finnish furniture industry withering in the shadow of the dominant paper and pulp cluster, as illustrated in Eskelinen and Kautonen (1997), was offered as an example). Thus, firms performing very different activities may have very different institution-building agendas. Institutional coordination problems and power struggles over institutional design may persist *even if* firms trade and depend on each other in vertical value chains.

Innovation and learning for competitiveness and regional growth – a policy challenge. Editor Peter Maskell. Stockholm 2001. (Nordregio Report 2001:4)

Fiorenza Belussi agreed that institutions are indeed not "outside the market" – rather, they are a central aspect of the way markets function. Just like we speak of market failures, it is relevant to speak of "institutional failures" for particular activities (for example too much standardization, leading to lock-in, etc.). She argued that because institutions are not a framework set from outside clusters, but changed by forces within clusters, researchers should analyze the emergence of institutions in an evolutionary perspective – not only as a political process (e.g. as a consequence of constitutions), but also with a large spontaneous order element.

Section II. Localized learning policies

The conversations in Mississauga

Some general policy issues

Is there room for localized learning policies?
There was general consensus at the Mississauga seminar that there is a huge scope for government learning policy (and that the worldview of the Thatcher/Reagan era should definitely be discarded). However, both Peter Maskell and David Wolfe stressed that this policy should *follow the logic of the market.*

Peter Maskell mentioned that localized learning policy could be problematic in a Penrosian regional capabilities perspective, because to formulate a policy (defining objectives and measures) would mean to codify what is "in the air" and lead towards competitiveness of a region (its capabilities), and thus make it subjectable to imitation by other regions. Pretty soon, all regions could possess the same resource, which would then not be a capability anymore. Does this mean that there is only room for very specific, embedded policies of a region (that grows organically), because no general and long-term valuable advice can be given? Is there no room for general policy thinking when learning is concerned?

Peter Maskell also inferred that policy is often demand-led: It is much easier to support existing industry and competencies than to politically create a total new supply of production resources (including knowledge).

Jack Smith had a view upon policy and policy organizations and agencies of "permissive dissonance": There should be room for change and experimentation. There was some debate at this point whether an "abundance" or variety of institutions is an advantage because it constitutes a "gene pool" of solutions that may be of future use, or whether it leads to too great short- and medium-term inefficiency.

Nations and regions

Ann Markusen claimed that ICT is on the verge of blurring the hierarchical relation nation-province-region-firm, because industrial activities and institutions can now evolve placeless. This complicates learning policies (which spatial scope should they have?) as well as their implementation. Peter Maskell was of the opinion that what ICT leads to is more like a "division of labor" between the activities that are becoming footloose and those that generally remains localized. Only in very few cases will there be a sustained competition between a transnational variety and a localized variety of industrial activities.

Ann Markusen meant that because very few regions are "Silicon Valleys", regional policy should in fact incorporate the large opportunities offered by ICT to stimulate learning and production *across* space – making the less favored regions a part of global networks.

Adam Holbrook said that in Canada, industrial policy at the local level is diminishing in importance – it is being transferred to the national level. This is a shame, claimed Réjean Landry, as the regional level was much less formalized and capable of taking a broader variety of policy issues into consideration.

The policymakers

Ann Markusen asked who the relevant policymakers in fact are. State authorities? Regions? Peter Maskell explained that in Scandinavia, there are many intermediate organizations designing and carrying out policies between government and industry. Many relevant competencies are pooled in such organizations, and this has advantages (for example, in transmitting information from universities to medium- and low-tech firms in a form which they can utilize) – however, there are potential problems, partly of rigidity and

bureaucracy (some are now states within the state), partly of too much qualified labor (academics) choosing to stay employed in such organizations rather than within industry. David Wolfe mentioned that the high salaries for academics in US and Canadian industry prevented such a problem there.

David Wolfe also commended the Canadian private *consultancy firms* that carry out government policies. Such agents are experienced, flexible, locally embedded, and efficient in allocating government funds – because they, in contrast to government agencies, have to follow the market. When such firms are utilised, public and private policy learning meet. Adam Holbrook and Réjean Landry gave other examples of private/public policy interfaces.

Institutionalization of policy

AnnaLee Saxenian pointed to the necessary interplay between public and private learning: At some point, the public – or at least some collective associations – institutionalize (and possibly formalize) the outcome of what is learned "at the bottom", in the guise of laws, rules, agencies, etc. In successful regions and nations, the public is particularly able to institutionalize the "right issues"– and to unlearn issues when demanded. She further suggested that within production systems or other contexts, "policy entrepreneurs" play a huge role for introducing new ideas or institutions – for policy learning. In early periods, some firms are pioneers, then practices may be accepted by workers and labor organizations. Later, NGOs (e.g. environmental groups or education interest groups) incorporate the new agenda – or new NGOs are formed. The greening of industry was given as example. Betsy Donald objected that such a historic process only can obtain momentum in successful regions – those that can afford to experiment and approach new problems. Meric Gertler also objected and mentioned that new agents or organizations entering into political debates often do so to *prevent* change – in order to maintain a status quo they see threatened by political evolution.

AnnaLee Saxenian described how institutions in Silicon Valley were built from scratch. Peter Maskell noted that this may have been an advantage – because then there was little opposition from existing, powerful organizations (e.g. banks). The system did not need to unlearn.

Closure and incentives to policy learning

In the case of systems that tend to be closed, external (market) shocks play a large role for change. A Canadian example was given of tourist

resorts that are rich in natural resources and hence have been passive in developing human resources. Today, some such resorts can offer demanding tourists few facilities, but have so far seen little reason to change their approach (the scenery is always there, right?). It was discussed whether an analogy to other types of regions could be made: Are regions or production systems that owe their success to a particular resource or principle, less prone to experiment with tomorrow's solutions – or do success today on the contrary provide a necessary stepping stone to developing new technologies? A clear picture could not be drawn. Mark Lorenzen suggested that the reason for systems' or regions' proneness to change vs. conservatism should be found in their economic history *in combination with* their social structure. Networks that are characterised by *strong ties* between agents tend to be closed to outsiders while offering participants few incentives to and little information for change. The question is what the "appropriate" degree of social cohesion within a network is: Strong enough to facilitate trust and information exchange, but weak enough to allow for experimentation and outside agents and knowledge to flow into the system.

No scope for planning?

Peter Maskell was asked by AnnaLee Saxenian whether accounting for social institutions as tacit, intangible, and unplanned (emergent over long time) means that new institutions cannot be planned nor existing institutions changed. Mark Lorenzen noted that even if many of those present at the seminar would agree that scholars like us can learn from sociology, anthropology, and cultural studies, this does not mean that we should just sit down and watch how good other scholars are in uncovering institutions that are organic and per definition cannot be influenced by planning: There *is* an important role for economists and geographers in understanding how social institutions co-evolve with economic and spatial structures, and in designing policies for creation and change of institutions, even if such planning may be tedious and indeed long-range. For example, when is there a correspondence between regulative and legal institutions (e.g. the ease of filing bankruptcies, the possibilities for pursuing old debts, and for making lawsuits against partners) and the structuration of the industry (e.g. the risk-averseness of managers, and their proneness to internalization)? And when are seemingly rigid legal structures of no

importance because informal social rules and conventions make the system function in another manner?

David Wolfe claimed that he was pessimistic about policies aiming at changing social institutions. In his opinion, what should be aimed at is making policy for technologies and industrial structures. AnnaLee Saxenian claimed that social institutions *can* change profoundly, and much quicker than we think (route 128 was given as example).Possible policy tasks

The purposes and beneficiaries of policy

Ann Markusen asked what the normative underpinnings of policy should be – competitive efficiency, stability, or what? Peter Maskell responded that at the outset, no policy should enhance inequality. As mentioned by the Nordic participants in connection to their inspirational basic questions: It should be the aim of policy to avoid nurturing a low-skill equilibrium where qualifications and training inadequate for employment in the knowledge-based economy leads towards inferior life chances, and to minimize social exclusion.According to Peter Maskell, the scope for localized learning policies (especially for small regions and countries in a globalized world) would be competitive efficiency.

Should policy "pick" "winners" or "losers"? David Wolfe suggested that winners should be supported, because they are the firms with the potential to develop or implement the next generations of technology. Should policy support winner *industries* or winner *firms*, then? It was argued that knowledge and dynamism inherent in industries may be seen as a public good, while it is more difficult to legitimize support for single firms. Jack Smith and Réjean Landry had the opinion that loans and subsidies should be given to large and leading firms indirectly – to their supply chain, supporting skill formation and the development of next generations of technology.

Some problematic Canadian examples were given of single firms being heavily sponsored by the public, while offering little benefits for Canada in return. In this connection, it was debated whether and how we can at all estimate the public benefits from policy, including support for single firms. Ann Markusen said that generally, the benefits from public R&D expenditure are hard to measure – and this is particularly true for hi-tech industries.

Peter Maskell noted that any selective industrial policy would interfere with the market mechanisms.

Ann Markusen added that there are some dangers inherent in focusing on sectors and regions: Within some industries, there is only

room for very few successful regions – there is a *sectorial* logic to regional development. AnnaLee Saxenian objected that we can view it quite the other way around: Industries are organized differently in different regions – there is a *regional* logic to industrial organization. Thus, it is very hard to compare or to say anything definitive about whether there is "room" for new firms within an industry in a region. Ann Markusen responded that there may be different modes of organization within the same industry in different regions – but they cannot all experience success at the same time. There is a "global best practice" that they can be measured against. This may however change over time, and new regions, organized differently, may then prosper at the expense of those who previously grew – there is only one sectorial logic at a given time.

Here, Meric Gertler added that there seems to be scope for *different* regional practices within the same industry: The internal organization of local plants of the same company may be quite different in different regions, due to differences in regional institutional environments, e.g. labor markets (the Canadian MiniVan was mentioned as example. Pradeep Kumar however claimed that the different plants manufacturing the MiniVan were different mainly because they served different markets, and this lead to e.g. different utilization of their capital equipment).

Incentives

Pradeep Kumar emphasized that we should regard both policymakers and business managers as maximisers if we want to understand policymaking and implementation.

Ann Markusen said that a profit perspective may be relevant when speaking of firms, but it should be further nuanced. For example, the process of learning may encompass huge differences in incentives of those who learn. In the case of interactive learning, little is yet known of what determines when there is trust and knowledge sharing between firms, and when there is closure and protection of knowledge. Here, AnnaLee Saxenian noted that "failures" of knowledge sharing and interactive learning may encompass both overly proprietarian and closed behavior (US arms industry in 1970s and 1980s, route 128 within minicomputers, Japan and Korea within electronics in the 1990s, Europe within a range of hi-tech industries, are all stories about autarkies and inward-looking firms), *and* overly open, naïve, behavior, leading to break-down of cooperation. For example, today, firms in Silicon Valley – sharing much more

knowledge than the average US firms – are looking into property law to define efficient boundaries to which knowledge can be shared.

Networks and hierarchies

Some remarks were made on the much-referred-to societal shift to post-fordism. Should this be seen as a shift of institutions in the Williamsonian term (meaning, vertical disintegration and new and less hierarchical organizational forms)? Réjean Landry was of the opinion that a central and little understood policy issue is in fact to foster a transformation within many industries from hierarchical to horizontal firms and networks. Neil Bradford gave a Canadian example, where industrial policy of promoting horizontal organizational forms and networks had failed, not due to lack of political will, but due to prevailing norms amongst industrialists.

Universities

The Canadian and US participants emphasized universities and hi-tech industries somewhat more than the Scandinavian participants. In David Wolfe's view, in the Canadian case, the transfer of knowledge from – particularly local – universities to firms is just as important as interactive firm learning. Pradeep Kumar stressed that the partnerships of knowledge sharing (not education) between Canadian universities and firms are market-led and experimental – just like the case in the US.

Réjean Landry mentioned that, like it is the case for other public expenses, it is difficult to measure the exact public benefit from investments in universities in terms of learning and innovation.

Betsy Donald mentioned the Canadian focus upon "selective excellence" of universities: Targeting local universities to be a major contributor to the dominating local industrial competencies. However, it is difficult to select these excellencies, partly because many regions have a variety of industries, partly because no university seems to want to specialize in non-prestigious topics. For example, all major Canadian universities claim biotech to be a coming selective excellence (funny, because biotech is the area with the least transfer of knowledge from universities to industry).

Labor

Apart from partnerships between firms and universities, educational policy must be seen as crucial for innovation and learning, and David Wolfe viewed university skills as most important for innovation. However, Ann Markusen stressed that in the US, the exchange of knowledge between firms through labor (workers shifting place) is

often viewed as "poaching" by firms. In her opinion, the tendency to oppose labor mobility between firms within a productions system largely depends of how the leading firms in a production system set the agenda. AnnaLee Saxenian inferred that new entrepreneurs with new views upon this might succeed to change the culture of labor exchange over time.

Finance

There was agreement that reinvestment of profits by industrialists back into industry is of central importance for learning. AnnaLee Saxenian mentioned Silicon Valley as a good example of a positive institutional environment of R&D, universities, *and* finance: The presence of venture capital in the hands of people with specific knowledge of the industry and thus the skills to invest it. This increases the efficiency of capital allocation—and, importantly, the speed.

Different types of venture capital were discussed. First, (relatively small-scale) local capital, where local capitalists (maybe even local industrialists) make investments on the basis of specialized knowledge of the local industry. Second, "professional" non-local capitalists (banks), investing across industries and even national borders. Third, Peter Maskell made clear that in Scandinavia, unions and pension funds had important roles to play for finance.

MNCs

Jack Smith mentioned the problem of branch plants and corporate headquarters. *Is* it really a problem that e.g. many Canadian firms are branch plants of US firms, when they maintain both production and R&D (and hence skills and spin-offs) in Canada? AnnaLee Saxenian argued that ownership matters little in itself; what is important is if wealth and innovation is transferred out of the country by the foreign mother company.

Adam Holbrook, Meric Gertler and Ann Markusen however agreed that it is problematic that MNCs can take advantage of national industrial policies and sometimes "milk" funds.

The conversations in Venice

Some general issues

The need for policy

Antonio Calafati said that it is the normal practice of policymakers in Italy to care little about the learning ability of local systems. In fact,

this is a truly new field of policy intervention. Until now, the ambitions are confined to adjusting to the evolution of industry (for example, supplying education and housing, and taking care of the social costs of economic development).

However, as Gabi Dei Ottati observed, for most clusters, learning is a sheer necessity for survival – ot only a high road towards leadership. The economic value of localized learning is not a case confined to e.g. Italian districts. The seminar participants hence agreed that policy should take learning into consideration – it would be very useful for all policymakers to be able to formulate a policy capable of boosting learning in their region. As Peter Maskell put it, there is a need for transforming the somewhat ideographic studies of industrial districts, clusters, etc., into a general understanding of how policy matters – including an understanding of the situations where most policy does not matter at all.

Fiorenza Belussi said that therefore, conception of policy as something that merely deals with the social costs of economic evolution is entirely wrong. The term "policy" should be reserved for actions that make a system go in a particular – maybe even new – direction. Mark Lorenzen added that even if this is correct, it does not imply central planning. Quite the opposite, regional policy is often about capturing and sustaining spontaneous processes – but doing this through collective *action* (referring to Hubert Schmitz' (1999) point that cluster efficiency comes from both external economies (spontaneous) and deliberate joint action). According to Mark Lorenzen, localized learning policy should comply with this, having as its goal to *facilitate bottom-up, non-planned learning processes amongst firms*. This is the most efficient learning mechanism in all industries, and even in high-tech industries or industries with little market uncertainty, this learning type is still a beneficial complement to internal R&D. Further, this learning type is less imitable by firms in other clusters, because it is complex and causally ambiguous. Fiorenza Belussi added that policymakers should help firms to both *exploitation* and *exploration* in their learning processes.

The danger of policy

Peter Maskell pointed towards the fact that the resource-based view on competitiveness implies a paradox as far as policy is concerned. If policymakers could really codify and put on a formula a policy that captures the essence of the competitive advantage of a region, this very act would necessarily undermine this very advantage in the future – because policymakers would imitate it elsewhere. Hence, if policy

implies a process of explicating and codifying, then there may be a limited role for localized learning policy.

Margherita Turvani responded that putting success on a formula is an indeed hypothetical case. Policy can be viewed as problem solving, and according to James March (e.g. 1988), problems are first understood and defined by agents after they have been solved. Ex post you can see that something was successful – but you cannot plan the process. This implies that political problem solving is very difficult. Can successful regional development at all be formalized? Or at all politically approached? At any rate, under great uncertainty, you need a lot of experimentation, and policy should allow for this.

The policy levels

Staffan Larsson pointed to the possible significance of scale: Some Italian regions have a population like Sweden's, and some Italian districts like Swedish regions. Antonio Calafati thus asked the Scandinavian group whether their interest in local clusters (e.g. industrial districts) was due to an interest in policies that may be applied to their entire nation – "small country economic policy". Mark Lorenzen answered that there are many internal differences within even small countries like the Scandinavian countries – for example, several regional clusters have been identified, and localized learning policies can indeed be developed for each of them. Even if a Scandinavian industrial district is much smaller than an Italian one, this regional cluster level might still be in focus.

Antonio Calafati remarked that differences in the performances of local systems and unique local development paths do not necessarily imply the existence of specific local patterns of learning or of local policies. In fact, with regard to local policies one may safely affirm that they have not been there in the Italian case. Gabi Dei Ottati agreed that until recently, Italian policymakers did not address regional economic systems – only the national and firm levels. Within research, economic tools for understanding them were also absent. But now, non-mainstream theories (e.g. transaction cost theory) are tried out, e.g. by Becattini and Gabi Dei Ottati herself. Antonio Calafati added that in Italy current industrial policies are at best *regional* policies – with central government still having much power. There have been no significant attempts to design and implement industrial policies tailored for specific local systems. The first step in this direction has been taken only recently, by introducing the first elements of an institutional setting for local industrial policies. Yet this lack of interest for *local* policies – among which policies designed

to increase the learning ability – may very soon change under the pressure posed by territorial competition. And against the background of global environments that are changing faster and faster, to increase the ability of local systems to learn – as a prerequisite to adjust – may easily become a fundamental policy field. This can be said for many other European localities also.

The policymakers

Gabi Dei Ottati stated that "policy" often has a connotation of central (national) government. But the real interesting aspect of policymaking is when purely *local* organizations – that often have different interests and agendas than national – go together in a consensus. Such a consensus possibly first arises due to a need to solve a particular short-term problem, but later it may encompass sharing of visions – plus the medium-term costs of pursuing them. Consensus and involvement of local organizations is the key to effectiveness of local policymaking. Special ad-hoc organizations may be designed by central government, and up to a certain point they may enjoy local participation. They cannot, however, play a role for longer-term development. Fiorenza Belussi agreed and added that when policy is understood and articulated in a play between policymakers and local organizations, it is necessary to take institutions – rules and conventions – into account.

Antonio Calafati pointed out that localized learning may take place in firms, in social and industrial networks, *and* also at the level of policymakers themselves. A scant attention has been devoted in Europe to how the decision-making process at local level may be improved. Shortcomings in the institutions governing the collective decision process are real obstacles when new kinds of policies are requested. Those who have an interest in increasing the learning ability of local systems should devote some attention also to the task of improving the efficacy of local collective-decision making.

Possible policy tasks

Promoting spread of knowledge and information

Fiorenza Belussi stated that a central concern for a localized learning policy is to facilitate local spread of knowledge and information. Margherita Turvani mentioned that in her view, the central task of local policy is not to provide a model for regional development, but rather to provide the feedback in information terms that may allow local agents to find out ex post how the economic system works, and learn accordingly.

Fiorenza Belussi directed attention to another type of learning policy: The transfer of already existing knowledge from one pool to another (i.e., education, knowledge transfer services/centers). Antonio Calafati added that policies to improve the ability to learn might demand large funds. This is a key question for "losing" systems, which do not command the resources to set in motion a process of learning able to cope with their backwardness. Then such policies ought to be undertaken by national rather than local authorities.

Promoting specialization

Peter Maskell asked the question: if (potential) diseconomies of diversification (as listed in section 2.4) are large, should policymakers strive at making clusters "clean", specialized within very few activities, and refine specialized institutions (at the cost of their ability to support other industrial activities)? Anders Malmberg said that we simply don't know enough to give advice about this: There is a learning trade-off between specialization and variety, as horizontal and vertical divisions of labor both have potential external learning economies. This trade of is clearly too little researched. Maybe clusters should strive for a proper diversification *balance*?

Gabi Dei Ottati suggested that some types of diversification could in fact be more beneficial to learning, as some different but *complementary* activities can be supported by the same local knowledge base (tacit as well as codified). In such cases, both horizontal and vertical division of labor is possible within a cluster. Peter Maskell asked what then determines when activities are too "distant" to utilize the same knowledge base? That there are few linkages or spill-overs between them? That their cognitive distance is too great? Antonio Calafati was of the opinion that cognitive distance is not a great problem for knowledge exchange. Although attractive and in some cases relevant, cognitive distance is of no practical importance. In his words, by definition a local system – or a network – is the result of a convergence in the cognitive systems of its members. Mark Lorenzen added that the amalgamation of social and professional life in local communities might supply local agents with some cognitive frames that make knowledge exchanges cognitively less taxing, even if other cognitive differences between them persist.

Mark Lorenzen also pointed out that while is very important to acknowledge the learning economies of diversification or similar activities, we should also remember that for regional economic growth, there are also other considerations. Other externalities than learning arise from divisions of labor, and there may be a clash. For

example, a medium diversification may optimize inter-firm learning, but at the expense of external scale and scope economies of production or transport.

Promoting diversification

Peter Maskell asked whether policymakers should try to identify industries where learning processes depend upon Smithian urbanization economies rather than Marshallian localization economies, and for these cases gather together different firms — seeking to diversify clusters, to encompassing many activities, and whole value chains, exposing the single sectors to competing organizational forms, technologies, lines of thinking, bodies of knowledge? This would result in interactive learning – but also an intense local competition for the design of institutions. Gabi Dei Ottati answered that all types of diversification are not good for learning, and policy should enhance complementary activities. The primary concern should be whether activities are based on a joint stock of (tacit) knowledge – "know-how trajectories". She suggested that such trajectories are not necessarily confined to production knowledge, there may also be important complementarities in marketing knowledge.

Providing services

Margherita Turvani referred to Brian Loasby and Adam Smith in pointing to the importance of individual firms' specialization for the emergence of service firms. Should policymakers facilitate an "optimal" degree and type of diversification – where the division of labor promotes new entrepreneurial activity, in the guise of service firms? Or should policymakers acknowledge that there can be market failures where services that may increase the efficiency of the cluster as a whole are never spun off or outsourced by firms, and then step in to "remedy" this failure through making the services public?

Fiorenza Belussi observed that we should not take Smith too literally: Knowledge markets are never functioning. Often, it is difficult for entrepreneurs to start up and fill structural holes, because existing firms dare not to provide them with the necessary information. Thus, there may be benefits by making the services public. Public organizations can easier be trusted to perform knowledge connecting tasks – because firms are their collective

members, or shareholders. Fiorenza Belussi added that she considered it true that in some cases, particular services – e.g. information systems, like databases on global clients – cannot be provided as a result of collective action by firms. Policymakers need to provide them. Margherita Turvani agreed, and added that poorly functioning knowledge markets and less scope for service entrepreneurs may be a minor problem for clusters with a high level of social capital. To this, Gabi Dei Ottati commented that the major achievement of some industrial districts is exactly that they give a large number of people the incentive and opportunity to exploit their latent capabilities through entrepreneurship.

Concerning public services, Margherita Turvani reminded that there is a danger of believing that services are always beneficial. This cannot be known without some evaluation. In some industrial districts, public services have emerged to the benefit of local firms, in others, their impact is not that great. In fact, services can end up as a surrogate for policy, as a sleeping pill for policymakers.

Opening clusters to the world

Peter Maskell pointed to the literature on "development blocks" (for example, Dahmén 1988), showing that firms learn when exposed to *external* pressure and new and competing ideas. Even with a coherent cluster in terms of vertical and horizontal relations, relations to firms outside the cluster may prove an invaluable source of inspiration. As Anders Malmberg said, even if you gain a lot from local knowledge, much of the creation of the new knowledge you need will happen elsewhere. There is always a need to monitor what happens in other places of the world. Consequently, firms localized within a cluster may depend on such external relations in order to obtain technological knowledge that is not locally available, and external partners may further channel information of world market developments – in terms of both opportunities and threats – to key agents within the cluster, so it may disseminate through the local information channels.

Anders Malmberg pointed towards the policy dilemma here: How much should policymakers emphasize promotion of collaboration, monitoring, knowledge dissemination within the local milieu, and how much should they try and open up the local milieu to knowledge from elsewhere? There may be another trade-off here – and the latter aspect of opening clusters to the world has often been neglected in the policy debate.

Innovation and learning for competitiveness and regional growth – a policy challenge. Editor Peter Maskell. Stockholm 2001. (Nordregio Report 2001:4)

Designing institutions and investing in social capital

Peter Maskell suggested that localized learning policy should first and foremost be aimed at the *barriers* for learning. Here, Francesco Trombetta injected that barriers for the learning process may be of practical rather than cognitive nature. New ideas, knowledge may be created but cannot be put to productive use due to practical problems. In many cases, regional economic structure is what causes lock-in for local economic development. Many problems may be detected, understood, and agreed upon by all local agents – but can still not be solved, e.g. due to lack of capital.

Antonio Calafati agreed with Peter Maskell in pointing towards the role of social institutions and urban structure with regard to the learning ability of local systems. Well-organized territories – usually cities or network of cities – are extremely able to learn against the background of changing environments, and their economic structures may be regarded to a high degree self-organizing and flexible (learning) structures. In his opinion, the local systems that have moved beyond the threshold where they become self-organizing and self-adjusting are extremely interesting cases to focus on. Fiorenza Belussi said that localized learning policy thus should also aim at social networks, through setting of institutions and rules (in North's words). Learning policy is thus not channeling money to firms, but providing them with an institutional environment promoting co-operation. Margherita Turvani added that when policymakers focus on providing an institutional environment, local firms will have a greater change of solving problems of collective order – for example, providing services themselves.

In some places, such an institutional environment has emerged by itself (and represents a high level of social capital), in other places, policy should create a superstructure to the existing institutional environment in order to get local agents to co-operate. This should not be viewed as a policy working *against* the market, rather, as a market-*enforcing* policy. Mark Lorenzen asked what this superstructure then consists of. He viewed it as consisting not only of *laws*, but also *standards* (here, policymakers have experience), plus *conventions* (this aspect, we do not know much about how to make policy for). Antonio Calafati focused upon the *network* element of social capital, and suggested that policy should aim at generating a flow of communication by investing on channels of communication: The physical dimension of communication should not be forgotten. Social capital – codes and channels of communication – can be improved not

acting on the socialization process – which is and should remain spontaneous – but rather on the infrastructure to communicate. Complex local systems – cities or networks of small towns as in the case of most industrial districts – with dense interaction structures, have proved most able to adjust to external shocks. Mark Lorenzen disagreed somewhat, referring to the case of the Danish/Swedish Øresund region. In this case, construction of better infrastructures has had little impact upon interaction patterns between agents. In his opinion, improvements in communication can never come about as a result of physical structures alone. Even if conventions may not be – and should not be – subjectable to political design, processes and contexts of convention *building* (i.e., institutional learning), should enjoy more political attention. Francesca Gambarotto added that somewhat counter-intuitively, there may be a special need for policy aimed at sustaining social capital when a cluster prospers, because successful firms may become increasingly individualistic.

Peter Maskell agreed that social institutions and social capital may have huge beneficial aspects for learning, and that in many cases, policy should provide it or support it. But there are also cases where local social institutions constitute barriers for learning, and that this may be the explanation for some systems never moving beyond the threshold of self-organizing referred to by Antonio Calafati. In some situations, social conventions, social interaction patterns that may in other cases be very favorable for learning, pose a barrier for learning, leading to technological or socio-political lock-in situations. There may be a poor fit between social institutions and economic activity – because institutions usually change much slower than economic structures. Thus, a central role for localized learning policy should be to support institutional *transformation* where needed.

Peter Maskell continued that while some types of social institutions may be generally good for learning and fit all cases (all types of economic activity), some particular types of institutions are more *specific* and are only suited to support a much narrower range of activities. Thus, we should study institutions both in a generic sense (which *kinds* of institutions are best under which circumstances), and in order to *customize* them to the particular cluster in question. Fiorenza Belussi agreed that we know from empirical studies that learning policy should be customized – for example, to whether a cluster has a very high performance or not. Here, Margherita Turvani noted that it might be difficult to identify a "competitive" or "high

performing" cluster – on which market, relative to which firms, where?

Possible policy tools

Education

Antonio Calafati and other participants repeatedly mentioned education as a central tool in a localized learning policy. Mainly, there was an emphasis on this tool's ability for facilitating knowledge creation internally in firms (organizational learning), and its particular importance for high-tech knowledge (internal R&D).

Fiorenza Belussi reminded the other participants that there are rather large differences in education policies between and within nations. For example, the type where capabilities are administrated by the central – sometimes even national – governments (the high tech capabilities within the nuclear industry in France were mentioned as example). Contrary to this, other systems favor diffusion and regional knowledge centers much more.

Organizations

Fiorenza Belussi argued particularly for the role of local organizations. However, she stated that the role of organizations is not limited to boosting localized learning. As a response to Margherita Turvani's observation that some service organizations make money on providing inefficient or obsolete services, and Gabi Dei Ottati's remark that some local organizations can be downright obstructive for learning, she added that policy aiming at preventing organizational lock-in may be important. Naturally, other local policymakers than the organizations themselves should impose such policy.

Another observation made by Fiorenza Belussi was that organizations are often unique to the particular regional system where they have emerged, because there is a co-evolution between economic activities and organizations. This means that it is very difficult for policymakers to superimpose or create new local organizations successfully.

Rules, standards, laws

Francesca Gambarotto said that while production system learning policy is relatively easy to approach (because the tools to analyze e.g. innovation processes and routines already exist), design of law, rules, and standards may be much more difficult. However, policymakers do possess some tools of modifying incentives and market behavior, and influencing market feedback processes.

Fiorenza Belussi also mentioned standardization as an important tool. For example, standardization can promote compatibility between technologies. However, it is central for learning efficiency to keep the system open to new technological factors. Thus, standardization should not reduce variety too much.

Land use

There was quite some discussion of the political tools available for influencing diversification and specialization.

Antonio Calafati mentioned start-up policy as a tool largely employed in Italy. Yet, he also mentioned "urban policy" (zoning of economic and industrial activity) as a key level of policy intervention to create a learning local system. Mark Lorenzen added entrepreneurial services and funding as a positive policy, promoting particular types of activity rather than working directly against other.

Peter Maskell said that technological developments seem to provide new opportunities for policy that aims to create diversified clusters, because firms' need for land is changing. With the diminishing land use for production purposes, policymakers now have a unique opportunity to enhance learning in territories by allocating land that is not any longer used by manufacturing industry – like harbors, roads, brownfield sites, etc. – to new productive purposes (converting old industrial land to new use, converting residential areas to industry and vice versa). Many learning-intensive firms (and indeed a lot of the "new economy" firms) can be co-located with housing, or other industry, and does not have the same needs for infrastructure as manufacturing industry (the remaining environmental problems being limited to traffic – not of goods, but of people). This implies a rethinking of zoning – or anti-zoning (mixing) policy. There is a chance that knowledge-creation through daily (and sometimes coincidental) interaction of people with different knowledge á la Marshallian districts is re-gaining in importance in the new economy, and planning has role to play in facilitating this. This is a diversity dimension – and the question is how it should favor the spatial aspect. Should e.g. IT firms be reserved particular areas, multimedia in other or should several types of industry be blended (with or without plan?), to create new types of social interaction, and new – possibly unforeseen types of learning?

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Antonio Calafati and Peter Maskell agreed that often, the available political tools for land use is not regulation of activity and exclusion of existing firms, rather, favoring new, incoming firms. Francesca Gambarotto observed that policymakers that are hoping to enhance local learning through allocation of abandoned land (for diversified or specialized productive use), face the problem that when land is abandoned, there is often high unemployment and poor finances. Mark Lorenzen added that this sometimes means that policymakers are tempted to accept all types of inward investments, regardless of their learning potential.

And that was the final round of conversations.

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