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Part II: The General Principles of Oeconomy

Chapter 5. Territories: The Pivotal Actors of the Twenty-First Century

1. Territories: Oeconomy's Building Block

Human societies are spatially organized and arranged into levels. These levels are created by social and political structures as well as by technology. They played an important role, for instance, in the ability of the Roman and Chinese empires to expand over vast amounts of territory, despite the limitations in the means of transportation and communication available to them.

At present, our existing means of transportation, along with computer technology and the Internet, reduce distances to such an extent that at times we feel ubiquitous, as if the whole world could be accessed from our computer screens. Yet the fact remains that society necessarily occupies a spatial location. While work has been partially dematerialized, human beings, families, housing, and the setting in which we live our daily lives remain very material indeed.

The spaces in which human societies are situated are also articulated with one another. This articulation may be continuous and enveloping (my neighborhood is a part of my town, which is a part of my region, which is a part of my country, which is a part of Europe, which is a part of the world). Alternatively, it may discontinuous and juxtaposed, as in the case of

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diasporas: a village in China, Algeria, or Mali may be intimately connected to a town, a neighborhood, or an immigrant dormitory in the Paris region.

Throughout history, the social space in which one lives has been defined by one's social standing. Previously, social hierarchies stretched from peasants or serfs to top bureaucrats (in Rome or China) who maintained regular contact with distant capitals, or to lofty intellectuals with informants spread throughout the empire.

Things have changed little. On the one hand, we have retirees and uneducated young people whose daily life may be limited to a single neighborhood; on the other hand, we have executives and business professionals who always have a Brussels subway map and their frequent flyers' card in their coat pockets. Yet if the Internet, like radio and television before it, expands information's horizons, and if Google offers access to a range of encyclopedic knowledge that was barely imaginable as little as ten years ago, our lives are still lived, most of the time, in a fairly restricted and limited space. And when we receive information from outside, it can still be difficult to distinguish fact from fiction.

It is not, moreover, only retirees and the uneducated youth who remain territorially based. It has often been observed that many American congressmen do not have passports, having never felt the urge to cross a border. As for international tourist travel, which accounts for much of airline companies' business, it continues to follow well-travelled routes, despite the fact that it has been democratized: one flies from one's home city to Tunisia's beaches, the Aztec ruins, or the Forbidden City, and then back again. The reason why it is so difficult to create a world community is that most of our material and spiritual life continues to be rooted in a few narrowly circumscribed territories. We travel through other territories the way one used to go through East

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Germany when it lay behind the Iron Curtain: by travelling along a single, narrow corridor that linked West Germany to Berlin.

Like society, politics, too, is organized spatially and arranged into different levels. The articulation of these levels, ranging from the local to the global, is, I have argued, one of the five basic principles of governance. The art of reconciling unity and diversity (one of governance's essential tasks) depends on the principle of active subsidiarity. Its basic philosophy is that no more restrictions should be placed on local communities than are needed to promote the common good.

In my previous book, I developed at length the apparently paradoxical idea that in a globalized system, in which interdependencies of all kinds exist on a planetary level, territories are destined to be governance's basic building blocks. By "territory," I mean the space in which we live most of daily lives (professional, familial, or social). Economists and geographers sometimes call these spaces "living" or "employment basins." This is the level at which major educational and health facilities operate. It is the main catchment area for commercial infrastructure. The political boundaries that emerged with earlier ways of inhabiting a territory have ceased to correspond to the new reality. Particularly in France, where over half of the EU's towns and cities are located, the municipality, the heir to the parish, now covers only a limited share of the new social space. In most countries, political systems are attempting to adjust to the changing ways in which we experience territories by amalgamating municipalities or by creating new political entities that join together old ones, particularly in major cities. To this end, for example, France has invented such political structures as "municipal communities," "urban communities," and "urban districts."

Human society is increasingly urban. Urbanization, which first began in England during the first Industrial Revolution, is now underway in China, India, and Africa. During the sixties, there were those who predicted the "end of the city," since the need for proximity—to power centers, markets, production sites, etc.—that is the historical origin of cities seemed in decline as a result of the automobile, decreasing transportation costs, and telecommunications. History has clearly proven them wrong, even if today's metropolitan regions, spread across hundreds of kilometers and crisscrossed by freeways, are only distantly related to their ancestors. Over the past forty years, cities have exercised a magnetic pull on our social, physical, and economic space.[1] Our globalized economy is shaped far more by urban and regional dynamics than by nations.[2] While national living standards are gradually converging, the difference between dynamic and sluggish urban regions continues, or, at best, is diminishing slowly, despite the best efforts of voluntarist redistributive policies.[3]

Why is it that economic and social development commonly occurs at the territorial level? The answer lies in the nature of the modern economy, which mobilizes different kinds of capital, particularly human and intangible capital, in a knowledge-based system. Major cities create level and system effects, by offering, for instance, a diversified market of skilled jobs and a wide array of services for companies, institutions of higher learning, and research centers. Far more than is often realized, the real economy rests on trust, which can only be created over time. It depends on personal interaction. This is why both companies and territories tend to become "islands of trust," that is, privileged spaces of interaction and solidarity.

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[1] Pierre Calame, "Des mégapoles viables, vivables et gouvernables ?," *La Jaune et la Rouge, Revue d'étude de l'École Polytechnique*, May 2005.
[2] Pierre Calame, "L'économie urbaine au XXIe siècle : pour une gouvernance urbaine stratégique," *Annales des Mines, Réalités industrielles*, May 2008.
[3] Source: Eurostat, "Le revenu des ménages privés dans les régions de l'Union européenne en 2004," February 2008.

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Why is it that our modern economy rests on two axes—a vertical axis, or globalized production chains, and a horizontal axis (i.e., territories), which together form the woof and the warp of our economic fabric? A particularly important reason is that standardized information accommodates distance, making it possible to spread production processes across the globe and to set up production units in countries with cheap labor costs, whereas more informal and less codified exchange usually requires proximity.[4]

Why is it, finally, that territories play a critical and ever-increasing role in governance—a trend that I have called "territory's revenge"? Let's put things in historical perspective. From the sixteenth to the beginning of the twentieth centuries, "territories" went through a complex process that transformed them into "spaces." The French Revolution both illustrates this trend and provided it with a political theory. Ancient communities, with their allegiances, their customs, and their particularities, were dissolved and replaced by individual citizens. Loyalty to particular territories was replaced by inclusion in the nation one and indivisible. This is the process I have described as the transition from territory to space or from community to citizenship: a society in which all the "lumps" have been smoothed out. This political shift has economic counterparts: atomized consumers and producers were in the same period freed from the shackles of guild organization, allowing them to interact on an integrated labor and commodities market. This is another take on the idea of a "smooth" or "unlumpy" society. The anonymous market mediates between the individual and the world. The peasant selling his wheat on the global cereal market and the consumer who has no idea where what her consumptions comes from, because indications of their origin would count as non-tariff barriers to free trade, are the final avatars of this "lumpless" society.

[4] Loïc Bouvard, Pierre Calame, *Le dialogue des entreprises et du territoire*, op. cit.

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But in reality, in the late twentieth century, the pendulum swung back the other way. In many countries (of which France was among the last), the weakening of the nation state, which was often enmeshed in the dynamics of urbanization and globalization and which was often accompanied by the remodeling of territorial collectivities into agglomerative structures, resulted in cities being granted greater means and autonomy to determine their own future. Living communities (or “destiny communities”), reorganized into urban territories, have emerged as a much needed mediating point between individuals and the world.

These are the facts. If one examines our society and economy and considers the future, it is clear that these kinds of roles will be even further reinforced. The growing importance of the territory draws on four considerations.

The first consideration relates to the introduction of human activity into the biosphere. Territories are the appropriate level for managing this issue. As soon as people know just a little about sustainable development, and when they seek a better lifestyle in which the search for wellbeing is related to the European consumption of energy and materials, they understand that neither states, for whom daily relations are abstract, nor companies, which are organized into production chains, are suitable places for managing relations that concern the system as a whole. It is at the level of territories that a new systemic approach to management must be learned, integrating all facets of human activity.

The second consideration pertains to social management. 70% of the Millennium Goals depend on the action of cities rather than of state. And, in economically developed countries, social cohesion depends on territorially-based cooperation.[5]

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[5] MartineMuller (dir.), *Des alliances pour des territoires innovants et solidaires*, Éd. Charles Léopold Mayer, 2001. Téléchargeable sur le site www.eclm.fr

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The third consideration relates to energy consumption. The latter grows rapidly when the density of spatial occupancy decreases: the more a city is spread out, the more energy it consumes. Given the inertia of infrastructure systems and the housing stock, the danger is that cities that are too spread out could become obsolete if there was a severe energy shortage. The residential problem could perhaps be resolved by decentralized energy production. But for transportation, things will be much more difficult. More than 70% of final energy consumption, with the exception of non-energy related uses of fossil fuels, comes from the residential sector and transportation, both of which are effectively tied to territories.[6]

Finally, the fourth consideration is a consequence, as we have seen, of the "knowledge-based economy's" very nature.

Territories are important for governance, in short, because they play a unique role in achieving two of its goals: reconciling unity with diversity and managing relations.

Their role in managing relations explains why, when economy gives way to oeconomy, territories become increasingly important. I am now convinced that territories will count among the twenty-first century's pivotal actors, provided that they are understood in radically new terms and are accompanied by new institutional arrangements. It is to the task of proving these claims that I now turn.

2. Territories as Actors

[6] Bernard Laponche, *Prospectives et enjeux énergétiques mondiaux,* op. cit.

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"Territories as Actors": could this term mean anything, or is it simply a manner of speaking? It obviously refers to the increasing role played by local and regional authorities, the largest of which have become important players on the international stage. But can one really speak of a territory as an "actor"? And what *is* an actor?

First of all, we must stop thinking that only institutions can be actors, since this leads us to think of an actor as having an "inside" and an "outside", and to place invariably unity "inside" and disunity "outside. We have already seen how poorly the idea of the nation as "one and indivisible," standing up against a foreign and barbarian world, reflects contemporary society.[7] The same can be said for institutions. In both cases the "inside world" is full of tension and its members linked to the "outside world" by numerous bounds of solidarity and affinity networks. This is also true of businesses. A company has a legal status that makes it a stable over time; it has financial and social capital; records of its internal and external transactions; a board of directors; a technical structure and decision procedures; and employees endowed with human and intangible capital. All management techniques are more or less aimed at strengthening the company's cohesiveness and getting employees to participate in the achievement of a common goal. But does this make it totally homogeneous and united? This is far from certain. We have even seen that the legitimacy of company leadership—shareholders and management—is often challenged, both by "insiders" and "outsiders". Is every company capable of lasting over the long term, of defining a vision for the future and a strategy embraced by all its employees? Of course not.

If one defines "actor" as a group of people who can, at a particular moment, pool their creativity, skills, know-how, and financial resources; who can commit their short-term actions to

[7] "Barbarians" in Greek means "those who stammer," in other words, those whose language is not understood because they do not belong to the Greek world.

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a long-term goal; who can take on the opportunities and hold tight when adversity strikes, who can anticipate and adapt to change, then an actor is not necessarily an institution—and all institutions are not necessarily actors.

I personally worked for many years to promote the international activities of the Alliance for a Responsible, Plural, and United World. I witnessed first-hand the cultural obstacles to understanding how such a network works. As a result, I began using the term "collective living beings" to describe these types of organizations—networks, alliances, coalitions, forums, or virtual communities—which are part of a world and yet which are not, legally speaking, "institutions." I realized at that moment that we must stop identifying actors as institutions and define exactly what an actor is.

An important consequence of these thoughts is that one is not born an actor, one becomes one. A territory—i.e., a totality of human relationships—is not necessarily an actor as such; yet if a will is there, it has the capacity to become one.

In *L'État au coeur*,[8] the book I wrote with André Talmant on reforming the state, we explained the three stages of building a relationship between government bureaucracy and society: understanding; dialogue; and planning. These three stages are just as useful for describing, in general terms, how organizations become actors.

"Understanding" refers to a collective effort to share information and acquire knowledge of ourselves and the world around us. Business consultants have developed methods for systematically diagnosing efforts aimed at reaching collective understanding, the most famous of which is SWOT (Strengths, Weaknesses, Opportunities, and Threats). Local authorities often speak of a "shared diagnosis" to refer to collective efforts to share an understanding of the world. Applied to a society, this is the same idea that is found in the inscription on the Delphic temple's

[8] Pierre Calame, *L'État au coeur*.

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forecourt: *gnothi seauton,* "know thyself," be aware of yourself and your limits. "Know who you are": build systems of information, measurement, and analysis that make this knowledge available. This is the first stage.

The second stage—dialogue—reminds us of an essential prerequisite to creating a sense of shared destiny. Without it, there could be no actors. It is through dialogue that "islands of trust" are formed, that transactions turn into lasting relationships. Dialogue and trust are necessary prerequisites for cooperation. This is central to the dialectic of unity and diversity, an essential component of the art of governance.[9]

The third stage in the development of an actor is planning. Let me recall at this point what I said (when discussing strategies of change) about building a shared vision. When actors are not institutions, planning refers to a process whereby people and organizations that are not bound by hierarchical relationships are mobilized on the basis of shared perspectives. No one is in a position to tell others what to do. An actor's planning is more strategic than bureaucratic: in an unpredictable world, each participant must be able to seize opportunities that might help to achieve the common goal. A plan is lasting, while individual initiatives are diverse, independent, and spread out over time. As the French sociologist Pierre Veltz writes: "The ability to plan and the existence of well-defined frameworks for collective action are the essential ingredients for development without a fixed model: hence the importance of institutions and public policy."[10] Similarly, the economist Christian de Boissieu explaines that energy transition will only take place if public policies are highly predictable over the long term.[11] An actor cannot exist without

[9] André Lévesque, the founder of the André Lévesque Fondation André Levesque for the Furture of Relationships calls this a "creative relationship." See notably André Lévesque, *Partenaires multiples, projet commun,* L'Harmattan, 1993.
[10] Pierre Veltz and Michel Savy, eds., *Économie globale et réinvention du local*, Éd. de l'Aube, 1995.
[11] Christian de Boissieu, "Conclusions du groupe de travail sur le facteur K," Conseil d'analyse économique, www.industrie-gouv.fr/energie/facteurk.htm.

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planning and resolve, which together form the backbone of collective action. These elements have the same purpose as that which Pierre Massé, a former director of French economic planning unit, once attributed to five-year plans: minimizing uncertainty for all actors.[12]

Now that the territory-as-actor has been defined, we must understand why it is destined in upcoming decades to become one of oeconomy's two major pillars. To begin with, let's consider the concept and specifications of "territorial oeconomy." They derive from oeconomy's general specifications, which stipulate that oeconomy seeks "to create actors, institutional arrangements, and rules." By institutional arrangements, I mean "actors and the system of relationships between them." When discussing the principles of governance, I stated as my fourth principle the "requirement that actors and institutional arrangements be competent and efficient." An essential element of governance is the art of devising arrangements and processes that "naturally" achieve the goals they have been assigned.[13]

Oeconomy's goals are no different than those of governance, namely: social cohesion; personal development and growth; peace and security; balance and long-term sustainability between human society and the environment. Oeconomy's specifications simply spell them out: "to guarantee for humanity as much well-being as possible, by constantly seeking to preserve and enrich the biosphere, by preserving the interests, rights, and abilities of future generations, in conditions of responsibility and equity to which all can adhere." These terms will serve us in defining "territorial oeconomy" and sketching out its institutional arrangements.

Though our domestic sphere, particularly our activities of production and exchange and our use of natural resources, has become global, this does not mean that individuals should be reduced to the role of producers and consumers of goods and services provided by globalized

[12] Pierre Massé, *Le Plan ou l'anti-hasard*, Hermann, 1991.
[13] Pierre Calame, *La démocratie en miettes* ("L'ingénierie institutionnelle : la conception des institutions et de leur fonctionnement").

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companies. As it is, the current situation is complex and contradictory. As far as products are concerned, brand-names play an essential role. They serve to guarantee quality, in a way that is meant to make clients faithful, trusting, and identifiable. Companies protect their brand-names carefully; listening to our leaders, you would think that counterfeiting is among the most serious economic crimes imaginable. At the same time, however, the idea that products should indicate where they were made is seen as a non-tariff barrier or proof of nostalgic attachment to the local. Yet it is central if we want to make the production and exchange tangible and reinforce the bond between man and nature.

In pleading for a major recognition of the role territories play in the oeconomy, I am not saying that we can “hide” from globalization, nor am I calling for a return to the age of self-sufficient local economies. The “re-localization of the economy,” as it is often called (and whose advantages I will explain later), should not be seen as a return to the past, but rather as a rediscovery, in the age of globalization, of the importance of territories.

To understand this idea, we must consider things through a different lens. Too often we think of a territory as a physical geographical area (i.e., a surface indicated on a map by dotted lines) or as an administrative or political structure (the ones who draw the dotted lines). Consequently, the governance of a territory is conflated with the actions of these structures. Instead, we must consider a territory as a nexus situated in a network of relationships[14] extending across the world: relationships between people, societies, and between humans and their environment. These relationships are, however, in crisis. Growing recognition of their importance makes the “re-localization” of our thinking necessary. In 1997, an international workgroup met in Jonquère (Quebec) to think about the management of territories. The resulting

[14] See the edited volume, *Territoires, penser localement pour agir globalement*, Cahier de proposition de l’Alliance pour un monde responsable, pluriel et solidaire, Éd. Charles Léopold Mayer, 2005. It can be downloaded for free from www.eclm.fr.

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"Jonquère Declaration"[15] emphasized that a territories can and must serve as a basis for a radically new conception of development. It will balance the vertical approach of value chains with a horizontal one. Rather than replacing one with the other, our goal should be to define two principles: that of territories, which strengthen relationships within society, between societies, and with the biosphere; and that of value chains, which organize the production process.

To establish the specifications of territorial oeconomy one step at a time, I will consider in turn each of oeconomy's main elements. This approach will be somewhat laborious. I ask the reader's forgiveness, as I was unable to find a more suitable approach to exploring these issues.

3. Territorial Oeconomy and the Mobilization of Capital

Territory is relevant, in the first place, for the mobilization of four kinds of capital. *Material capital* is mixed. It includes both public and private capital. In both cases, it is territorialized: private capital consists of buildings and machines, while public capital consists of roads and transportation infrastructure, the housing stock, and everything that used to be called (in times when Marxism was fashionable) "the conditions for reproducing the forces of production."

Human capital is the totality of individual skills, knowledge, and experience. It is not particularly mobile. Mobilizing human capital is fairly easy for simple economic units requiring only unskilled labor. It becomes, however, a major determinant for efficiency as soon as a knowledge-based economy begins to develop. This capital is created, preserved, and developed at the level of territories. A major challenge faced by territory-actors is to consider their human

[15] Ina Ranson, ed., *Repenser les territoires : construire des perspectives communes.*

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resources as a whole, showing as much concern for them as they show companies. These first two kinds of capital do not require extensive discussion. I will, however, dwell a little longer on the last two.

Some *intangible capital*, such as software, has no physical basis; but some is much more localized. It consists of the arts of organization and governance, of networks of trust, and of habits of cooperation between different kinds of actors. It is the fruit of lengthy learning processes that have become cultural traits. Nothing expresses the collective and determining character of these learning processes better than the fact that, half-way around the world, a group of people will, like a swarm of bees, reproduce the organizing principles of the community from which it hails. One of the finest examples I know concerns the Germans living in the Soviet Union, whom Stalin, out of suspicion, deported to Central Asia. Some were literally dumped onto new territories, simply because that is where their transport happened to break down. In places like Kyrgyzstan, they built German villages as perfectly as a sunflower seed produces a sunflower when it falls off a trailer. Cultural, intangible capital includes elements that are national, which is why economic rivalry between nations does not involve a “race to the bottom” in terms of salaries, but rather a competition between different systems of organization. But it also includes many local characteristics.

Competition between territories is also a competition between types of organizations and between different capacities for cooperation. In a study from 1987, I emphasized the importance of a territory’s particularities, observing, for instance, that while industrial cities that had developed in the nineteenth century often found themselves in crisis, older commercial towns, which had stagnated for decades, were being reborn, since the abilities and types of organization

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required by a modern economy were closer to those of commercial towns than to those of industrial cities.[16]

Over the past twenty years, increasing attention has been given to emerging systemic effects of cooperation. This was the case in Emilia-Romagna and other Italian industrial districts. Adriana Luciano, a professor of labor sociology at the University of Turin, notes in 2006: "The success of small companies in Italy between 1970 and 1980 is known throughout the world. Their success was based on a dense network of social relations between entrepreneurs, workers, local associations, political parties, and religious organizations. It allowed different actors to work collectively and to be able to count on great flexibility in the production process, increasing capacities of innovation, modest labor costs, and major capacities for penetrating international markets."[17] One should not have a romantic vision of the origins of these Italian districts, which hosted mostly small companies. The labor force was not very qualified, companies were not very structured, and they were later the victims of outsourcing. But the very fragility of each company calls attention to the "systemic effects" of their cooperation. This is what allowed them to get a foothold on the international market, while their isolated peers could at best only survive in local markets.

The example of the Italian districts contributed to a renewed interest in economic geography and "economic clusters."[18] Michael Porter points out: "If the former consideration of consolidating economic activities has become less important with economic globalization, other considerations have on the contrary played an increasing role in international competition, in a complex and dynamic economy largely founded on knowledge. Clusters represent a new way of

[16] Loïc Bouvard, Pierre Calame, *Le dialogue des entreprises et du territoire.*
[17] Adriana Luciano, "Italie : la culture de l'innovation, un enjeu politique," in *Pour* 192, December 2006. See www.grep.fr.
[18] See, for instance, Michael Porter, "Locations, Cluster and Company Strategy", in *The Oxford Handbook of Economic Geography*, Oxford University Press, 2000.

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conceptualizing national and local economies and entail new roles for companies, public authorities, and other institutions which promote competitiveness." In France, clusters have become, through the promotion of "poles of competitiveness," the key concept of the DIACT (the Inter-ministerial Delegation for the Development and Competitiveness of Territories). Way back in 1994, Pierre Veltz published a small book with an evocative title: *Territories for Learning and Innovation*, which shows that fostering relationships and solidarity between actors is now more decisive than the location of infrastructure and equipment.[19]

This discussion contains a lesson that is very important for what follows: in the institutional arrangements of the future, a system of structured relationships can play a decisive role *without* being formalized or transformed into new institutions. Networks of trust, an ability to work together, bonds of solidarity that are sturdier than legal bonds, the pooling of experience, learning that occurs over the long term—all of these factors belong to the domain of relationships (as we called it earlier) rather than transactions. At the individual level, they are often described as "social" or "cultural capital." They are essential to a society's resilience, to its ability to spring back from a crisis. Statistical tools often have a difficult time detecting these characteristics, precisely because they are informal and qualitative. Such intangible capital explains the decisive role played by diasporas in economic development: the Chinese diaspora in Southeast Asia, the Lebanese diaspora in Africa and Latin America, and so on.

Let us turn now to the fourth category of capital, *natural capital*. Even if it can only be defined at a global level—as with the climate, the halieutic capacity of oceans, and biodiversity—this natural capital remains for the most part localized: soil fertility, water quality, the potential for renewable or fossil energies, biomass, and raw mineral materials.

[19] Pierre Veltz, *Des territoires pour apprendre et innover*, Éd. de l'Aube, 1994.

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For millennia, societies have maintained natural capital, using natural resources without killing “the hen that lays golden eggs.” Those who failed to respect this rule, as the Roman Empire, perished. Hence the beauty of the definition (mentioned above) that Carl Linnaeus gave of oeconomy as early as the eighteenth century: “the art of preparing natural things for our use, the art of making use of all of Nature’s goods.” Making *use* and not making *profit:* all the difference between wisdom and madness (to borrow from the Gospel’s parable of wise and mad virgins) lies in this distinction. The idea of making the best possible use of the ecosystem, while preserving its potential, is central to oeconomy’s specifications and offers us a roadmap to the oeconomy of territories.

An agricultural property managed in a competent and sustainable manner, which makes use of its natural resources in a way that is genuinely beneficial to people, while also guaranteeing that at the end of each annual cycle the property’s potential are not only preserved but also enhanced, is a fitting metaphor for territorial oeconomy.[20] A territory is an ecosystem. Like oeconomy, it is not closed in on itself. It constantly interacts with the outside world: it interacts with the atmosphere both by producing oxygen, carbonic gasses, and nitrogen and by throwing out many more or less degradable molecules; it interacts with the earth’s substratum, particularly through soil transformation; its water resources participate in the planet’s water cycle; it circulates the genes of plants and animals; it participates in the migration of insects and birds, etc. In these respects, it gives us an implicit mental image of the oeconomy.

If we can speak of a local ecosystem, it is because we can describe this ecosystem’s “skin”—the virtual “membrane” through which interactions with the outside must pass. Moreover, the interactions within this “membrane” are particularly intense and complex compared to those on the outside. Consequently, we might speak of a “territorial metabolism” as the metabolism of

[20] See www.labergerie-villarceaux.net.

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matter, energy, and information. For better or worse, human activity participates in local ecosystems and is so important that one cannot understand an ecosystem independently of it: ecosystems do not exist apart from man's presence, even in the deepest reaches of Siberia or the Amazonian rainforest.

Consequently, the question of whether human involvement in ecosystems and the new metabolisms resulting from it are sustainable or contribute to a regular increase in entropy (despite the permanent contributions of solar energy) is a life-or-death question for our societies. And yet our current economic system condemns us to be ignorant of these territorial metabolisms. The idea that everything has a monetary equivalent and the gradual disappearance, between the sixteenth- and the nineteenth-centuries, of the ideal of managing local natural capital as a "good father" (because we have been so certain, ever since the "age of discovery," that American gold and silver would increase the money supply, that vegetal and mineral resources from across the world would feed our populations and our factories, and that fossil energies like gas and oil would be provided in unlimited quantities) have literally blinded us to our own metabolism at both a planetary and a local level.

An anecdote from the early 1990s illustrates this point well. As late as this period, the Ile-de-France region (the city of Paris and all the surroundings)—one of the richest and most sophisticated "territories" in the world—did not even know what energy flows were entering and leaving it! So how could one hope to understand its territorial metabolism? Two thousand years ago, even the most remote Chinese village had an infinitely superior understanding of its metabolism than a modern metropolis—precisely because its survival depended on it.

Such ignorance is the consequence of two intimately related factors. First, no one felt the need to comprehend the local natural capital and the exchange flows that constitute the territorial

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metabolism. Furthermore, the institutional arrangements simply ignore the management of the region's natural capital and the sustainable functioning of its territorial metabolism. Yet as I have shown, a permanent system of measurement cannot exist unless an institution has a daily need for it. Our image of society is in many ways a patchwork of the information that institutions produce, which itself is a by-product of the inherent needs of institutional arrangements. Suren Erkman has shown this very effectively in relation to companies and industrial ecology. Companies know a great deal about their operations or inventory (for example), as long as these factors impact its bottom line and its profits; but they are almost entirely ignorant of the flows of matter passing through them, if these are not included in its system of accounting.

Consequently, institutional arrangements must be conceived in such a way that they have the need—an inherent need—for understanding this metabolism. The most basic need is that of accountability: institutional arrangements must be required to keep track of the state of the four categories of capital at the beginning and end of each annual cycle. This will oblige them (as we already saw for the planetary level) to analyze these different kinds of capital and to agree on a way of describing their condition. In 1974 Lester Brown founded the World Watch Institute, which publishes each year a report on the state of the planet. Through the publication of its annual report, *The State of the World,* the institute has developed a global standard, tracing the overall evolution of the planet. In the 2008 edition, *The State of the World* emphasized the increasing awareness among CEOs of environmental risks, but also of the technical possibilities of guaranteeing the traceability of consumption and emissions at every stage of the production process.[21]

[21] See Daniel C. Esty's editorial at www.worldwatch.org.

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4. Territorial Economies and Resource Mobilization

Apart from capital, production and exchange also mobilize three other resources: human work, natural resources, and information.

Human work must be considered from four different angles: as fostering social bonds, as contributing to well-being, as enabling social inclusion, and as requiring fairness.

First, let's consider the creation of social bonds. Does work facilitate the creation of bonds, whether at the local or the global level? Can it foster local cohesion while simultaneously establishing a world community? How does one make the shift from transactions (which are abstract and brief) to relationships (which are concrete and lasting)? And should one simultaneously strive for local autonomy and global solidarity? There are two answers to these questions: traceability, which allows us to know where the origins of the labor incorporated into the goods and serves we consume; and a clear distinction between work performed inside a territory and work that comes from outside.

The second angle from which work must be considered is well-being. Does work provide those who perform it with a sense of dignity? Does it offer them opportunities to live in accordance with their fundamental political, economic, social, and cultural rights, which are recognized by various international agreements? Does work give workers an opportunity to create? Does it add to their "cultural capital," their social network, or their sense of worth? Does work allow them to bring their actions in line with their beliefs? These questions belong to the specifications of territorial institutional arrangements. They concern both the ways in which the common good is pursued at local levels (along the lines of Community Interest Companies) and internal procedures of oeconomic actors.

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The third perspective on work is its inclusive character. I realize that the obligation to be socially useful has a bad reputation, at least in France. For some proponents of the welfare state, this idea too readily recalls nineteenth-century sweatshops, where the poor labored in conditions that were only barely distinguishable from slavery. By the late twentieth century, the controversial issue had become the industrial labor conditions in developing countries. Opponents appealed both to humanitarian arguments—child labor, the work conditions of Mexican *maquiladoras*, Chinese workshops, Bangladeshi companies—and to a fear of unfair competition, made possible by low wages, leading to the kind of "race to the bottom" of wages and salaries routinely denounced by unions. This debate is essential. I do not mean to sidestep it; rather, I want focus on how it relates to territories. My views were shaped during the 1980s, when the nature of social exclusion began change. I realized that our society was becoming one in which "the rich no longer needed the poor."[22] Consequently, by putting human labor and natural resources on the same level, one ran the risk of a total misunderstanding. I was particularly marked by my personal experience of the industrial crisis in Valenciennes, in northern France, which saw its mining and industrial basin swept away in the seventies. I discovered firsthand the illegitimacy of an economy that could, at a local level, allow idle hands, untapped creative energy, and unsatisfied needs coexist in the same household, floor, or neighborhood. There may be good social and fiscal reasons for this kind of situation, but it is still an outrage. Efforts were made to overcome the crisis by creating local exchange trading systems (LETS) or companies that sought to place workers into particular industries. I also realized that national policies for fighting exclusion suffered from an original sin: their assumption is that national solidarity is primarily owed to those who suffer from some kind of personal handicap.

[22] Pierre Calame, *Mission possible*, op. cit., first published by Desclée de Brouwer, 1994, then by ECLM2003. See the chapter entitled "The Rich No Longer Need the Poor."

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While this might seem sensible, it has the unfortunate consequence of trying to help people to develop by emphasizing what they lack. Yet any time one helps someone develop, whether it be a child or an entire people, one must start from their capacities—i.e., what they have.

How do we get beyond these policies' original flaw? This question led, during the nineties in France, first to a manifesto, than to an organization of *pactes locaux* (local pacts). Similar ideas also inspired, around the same time, the creation at the Europe level of Territorial Employment Pacts.[23] Territorial oeconomies spontaneously require such pacts.

Finally, the last angle from which work must be considered is that of fairness. Territorial oeconomy must allow the distribution of added value to be transparent.

After work, natural resources are the second resource that oeconomy mobilizes. They raise two questions: how much natural resources do we consume? Do we derive from them the optimal degree of social well-being? The premises for answering these questions can be found in three ideas: energy efficiency; the analysis of material flows and MIPS (material input per service unit); and human and industrial ecology, which offers a general framework for a more integrated approach to economic activity. In addition, two other concepts need development: collective living being and of exergy.

I have already spoken of collective living beings, which have all the characteristics of organized living systems while lacking institutional and jurisdictional limits. The idea of collective living beings is obviously evocative of the living beings one encounters in nature, ranging from single-cell organisms to human beings and even ant colonies[24] or bee swarms, which have long been described as "superorganisms," since their self-regulating mechanisms resemble those found in individual organisms. To consider a territory, and particularly a

[23] http://ec.europa.eu/regional_policy/innovation/innovating/pacts/en/index.html.
[24] Dominique Lestel, "Où commence et où finit un corps de fourmi," in *Cahiers de psychologie clinique*, n° 30, De Boeck Université, January 2008.

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"territory turned actor," as a living organism, has immediate consequences. We should first note that this organism has "skin," a membrane (which, in the case of superorganisms, is virtual) through which it filters its interactions with the outside, using them in the organism's best interest. I can already hear the free-market zealots cry: "you are gradually reintroducing protectionism! But don't you realize that such barriers, by filtering trade, are an obstacle Pareto optimality?"

Fortunately, this objection is easily brushed aside. The same zealots would presumably admit that companies—some of which are more powerful than many states, and thus, presumably, many territories—also behave like living organisms with membranes that filter out their relations with the outside world. One merely has to designate each territory as a "Territory-Company, Inc.," and the problem is solved. I propose that we call the way in which territories manage their relations with the outside world the art of "open-closing."[25] This term makes it clear that a territory is never completely open nor completely closed on itself. We have seen, moreover, that the skill of "open-closing" has been central to the historical paths taken by many nations.

The second concept that I will be using is that of exergy. The term might seem scholarly, but its concrete meaning will quickly become apparent. The term originated in thermodynamics. Its fate, however, has been comparable to that of "greenhouse effect" in debates over climate change: it is an old concept ("greenhouse effect" was already used in the early twentieth century, having been invented in the nineteenth) that fell by the wayside before being rediscovered when it suddenly proved useful for articulating a pressing social problem. The term "greenhouse effect" became popular in the late twentieth century because of growing awareness about climate

[25] The author uses the French neologism *"overmeture,"* a contraction of *ouverture*—"openness"—and *fermeture*—"closing." (Translator's note).

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change. The concept of exergy has had a less brilliant career, but it was dusted off and put to use during the first energy crisis. What will be the fate of the concept of oeconomy, exhumed from the eighteenth century? Only the future will tell …

In thermodynamics, exergy refers to all the energy in a system that is available for human use. It consists of work (the energy needed for motors) and heat. According to the second law of thermodynamics, not all the energy in a system can be extracted from it. Even less can be turned into work. These ideas can be illustrated by thinking about the process for making olive oil. Work is like the olives' first cold-pressing, while exergy is all the oil that can be drawn from olives through thermal procedures and extractive chemicals. Though a comparison cannot be persuasive as such, it conveys at an intuitive level the point that I am trying to make: work is premium energy; exergy is its leftovers. The connection between what Linnaeus called the "art of making the most of all nature's goods" and exergy is self-evident: to mobilize exergy is to make the most of a particular quantity of energy. I discovered the importance of the idea, if not the concept, in 1971 while I was studying economic development in Algerian towns. I observed that their population growth were a far cry from the calculations I got while following the models I learned in France. In a nutshell, these theories claimed that one finds two kinds of jobs in cities: "base jobs," which produce goods that are sold outside the town and thus provide it with resources, and "induced jobs," which are tied to local household spending (industries supplying the local market, building, businesses, public and private services, etc.). Normally, the ratio between base and induced jobs is fairly stable (depending on a given's town size): base jobs drive growth, while induced jobs are multipliers. Today, the term "base job" must be replaced by a broader concept, such as "base entering resources." The reason is that social transfers, retirement, unemployment indemnities, social security, and so on, have taken on much greater

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economic importance in most modern cities, even as we remain in the grips of antiquated ways of thinking. How does a given territory use the goods that filter through its membranes? And what explains the enormous population disparity between Algerian towns in 1971 that received the same quantity of external resources? Elementary, my dear Watson: different towns use these resources differently. In some cases, the redistribution of resources within extended families and the purchase of locally produced goods and services promoted the circulation of money within the city, ensuring that it only left when it was needed to buy staples that the town could not produce for itself. To return to my metaphor: oil was drawn from olives by every means available. Yet in case where modern sectors were grafted onto local and (from their perspective) alien societies, salaries were paid to people who aspired to a “modern” lifestyle and were thus used to purchase goods and services that the town itself did not produce. Money left the town as quickly as it entered, with no benefits to the local economy. When I was a child, I knew of a large American company based in France that experienced precisely this problem. The base’s employees brought in everything from the United States, including food. Consequently, the local benefits for what amounted to a considerable injection of money were quite modest. The same is true of certain tourist complexes, which in some developing countries benefit from a quasi-extraterritorial status. Thierry Lassalle, a French agronomist and an expert on southern Africa, once explained to me how social benefits were distributed to the rural black population after the end of apartheid. The day the subsidies were handed out, white farmers in pick-up trucks were always nearby. This way, the recipients could instantly use their cash to buy agricultural produce. Why? Because the local black population no longer had the know-how or ability to produce and trade. Taking the opposite approach, local development tries to make maximum use of all the resources that enter a community. It seeks, in other words (returning to my metaphor),

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to extract as much oil from the olives as possible, beginning with the high quality oil from the first press, followed by lesser quality oils, and so on. Ultimately, the press cake is fed to animals and the burnable leftovers are used for heating. Nothing is thrown away except unusable residues. Gorgeous olives are the input; the output, carbon gas and clinker.

In a given territory, exergy can be used in multiple ways, but the purpose is always to bring a chain cycle to conclusion. The chain should be as long as possible: each link’s waste products become next link’s raw materials, until all available energy—work, heat, and chemical potential—has been exhausted. A hydroelectric power station’s cooling water heats residences, household waste becomes compost and biogases, plastic waste is used as building insulation, home appliances are dismantled and rebuilt on the spot, rainwater is used for laundry or watering plants, old sheets become rags, linens are unsown and re-sown, and our “Sunday best” become our work clothes. Home oeconomics—the art of the leftover—was well-known to our grandparents. For many young people, hardly a memory remains.

How do we put exergy into practice? Three conditions are required.

First, we need to understand flows and circuits. One must be able to distinguish clearly between external and internal exchanges. This requires, in the first place, a tool for measuring entering and exiting flows. Next, we need separating accounting units—i.e., a currencies—for internal as opposed to external exchanges.

Secondly, we must replace consumption of natural resources and imported goods with local work, just as our grandmothers would mend socks rather than throw them out and buy new ones. This substitution requires an appropriate fiscal structure, one that rewards work and penalizes imports. Taxing the consumption of natural resources instead of work is far preferable to taxing flows entering a territory.

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Third, we must change our conception of goods and services. This is both the goal of the opponents of our "throwaway" society, who advocate greater consciousness of a product's complete lifecycle (i.e., "from cradle to grave"), and the core principle of a "user society," which seeks to replace each good—for instance, a car, a photocopier, or kilowatts—with a corresponding service: a convenient way to travel, photocopies on demand, or a certain level of home comfort. The transformation of goods into services presumes a modular or standardized framework, allowing a unit of the good to be replaced by a generic unit fulfilling the same function. It also requires norms of inter-operability and the development of territorial recycling services, based on the principle of exergy: goods begin their lives with their highest quality uses and end them with more ordinary uses, like those bathtubs one sees in the countryside which end their careers as troughs.

Territorial oeconomy must thus answer the questions "how much do we consume?" and "do we make the best use of our resources?" as follows. First, it emphasizes the traceability of the energy, natural resources, and work that enter and exit a territory. The traceability of goods and services means, first of all, knowing what flows are entering, and, second, knowing their content in energy, natural resources, and work—in other words, everything that was mobilized across the production and transportation chain. New information technology will make it possible in the near future to add up these three production factors, just as we now do with added value. Often, we lack "upstream" information. In such cases, our approach should be the same as a toll-booth attendant: it you don't have your ticket, we assume you've driven the whole road. This creates a strong incentive to hold onto one's ticket. The Germans, as we have seen, use the nice expression "ecological rucksack" to designate a good's contents in energy and natural resources.

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Empirical studies of the ecological rucksack of our consumption have, moreover, since the beginning of the twenty-first century, made it possible to establish the precise conversion coefficients of goods into natural resources and to achieve better understanding of the considerable discrepancies in resource consumption between different households. A Finnish study presented in March 2008 at the Sustainable Consumption Research Exchange (SCORE) conference in Brussels shows that the variation in natural resource consumption from household to household can be as great as 1 to 10. The most determining factors are income—the more one has, the more materials one consumes—and lifestyle choices, particularly residence, transportation, tourism, all of which are heavily tied to energy and, to a lesser degree, food.

The canton of Geneva in Switzerland offers an excellent example of the territorial approach.[26] Beginning in 2001, it initiated a canton-wide study of its industrial ecology. Conducted between 2002 and 2005, the study examined the entry and exit flows of seven major goods: water, energy, metal, wood-paper-carton, plastics, construction materials, and food products. It makes it possible to grasp the major flows, as represented in the chart below.[27]

The study was conducted primarily to analyze opportunities for creating greater synergy between different Genevan activities, with the view to making the canton's recycling system more efficient. It did not look "upstream" to determine which natural resources were mobilized to produce the entering metals, wood, plastics, and construction materials. Yet both the Finnish and the Genevan studies suggest that, in the near future, it will be possible to have complete analyses of material flows, thus raising awareness of how greatly ecological rucksacks can vary

[26] Service cantonal de gestion des déchets GEDEC Écologie industrielle de Genève ; premiers résultats et perspectives, www.geneve.ch/environnement_info.
[27] Guillaume Massard, Suren Erkman, "l'Écologie industrielle à Genève ," ICAST, seminar held on November 10, 2007.

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in relation to modes of production.[28] To take but one example: recycled aluminum mobilizes four times as many resources as primary aluminum. This data thus increases our own self-understanding, which becomes increasingly important as we abandon an abstract monetary economy for an oeconomy of the real.

[Insert graph

Figure 1: Total resources flow for the canton of Geneva in 2000.

(HWIP = Household waste incineration plant; WPP = water purification plant).

The arrows' thickness approximately represents the relative volume of resource flows.

The numbers indicate thousands of tons (for material flows) and terajoules (for energy: one terajoule = one billion joules).

(NB: the flow of 100,000 tons that is shown to be exiting at the bottom of the graph represents digested food, which human breathing releases as CO2).]

The next question is: do we know how to make the best of resources entering a territory or located within it? Our thinking about this issue is much less advanced. In fact, this question can be broken into two: do we know how to take advantage of resources? And if so, do we have a strategy for doing so?

We are only dimly aware of how we use natural resources. Why? Because our existing institutions and arrangements have no functional need for this information; consequently, they do not seek it. For instance, because the value added tax is a national tax, the considerable information that fiscal data offers is not exploited at the territorial level. Recording the geographic origins of the scores of VATs deducted from any given commercial undertaking

[28] See www.noah.dk/baeredygtig/rucksack.

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would be a first step towards understanding the extent of local exchange. The most reliable method, however, would be a tracking device reserved for internal exchange—in other words, a local currency. In the chapter on finance and currency, I will analyze new ways for carrying out currency's traditional functions, as well as the possible roles that local and regional currencies could play. For now, let us focus on the tracking function, which relates to the role currency plays in exchange. The main requirement is the generalization of electronic billfolds for transactions currently using paper money. Other transactions, such as checks and credit or debit cards, are already electronically recorded, which makes keeping track of where they are made relatively simple. This kind of analysis can easily be completed by monographic studies that correlate statistical data with particular lifestyle habits, like the Finnish study of how ecological rucksacks vary from family to family. The interest in an analysis of exchange flows both inside and outside a territory is that it facilitates a kind of double-entry territorial bookkeeping, which could be essential for consolidating territorial accounts.[29] This is especially important when one considers that several territories can be subsumed under a larger one.

The absence of such data has, needless to say, no relation to the technical possibility of generating it. As the Geneva study, for instance, demonstrates, an interest in recycling "upstream" materials and energy waste (i.e., energy that has degraded into heat) as raw materials for "downstream" industries and in "mutualizing" the benefits of environmental remediation has increased knowledge of territorial metabolisms as well as of the material flows both within and between territories to an extent that was almost unimaginable twenty years ago.

I have already referred, when considering VAT, to the role taxation can play in society's self-understanding. Is it not the state's primary concern to have a detailed understanding of

[29] For these thoughts, I am grateful to the Filipino economist Sixto Roxas, particularly the book A*lternative Community Centered Accounting*, 1994. The book can be downloaded at www.core-dem.info or on Sixto Roxas 's personal website: www.sixto-k-roxas.org.

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taxable resources? In a country like France, both at the national and local level, the existing tax system penalizes work. It is true that, at the local level, the old income tax has been replaced by a "professional tax," which itself, since 2003, is based only on the land-value of local capital assets, now that the share based on income has been abolished. Furthermore, this tax increasingly benefits inter-municipal structures. It is, one might say, a "territorial tax." Both changes are headed in the right direction, but the tax base still consists of corporate capital assets located in a particular territory. Consequently, they generate no useful information on a territory's metabolism. If there was a positive rate territorial tax on natural resource consumption, with a deductibility mechanism that was the opposite of the VAT's, making it possible to recoup taxes on the value of natural resources that were resold; and if, furthermore, there was a negative rate tax (i.e., a tax credit) on local added value (i.e., local labor), the payoff would be twofold: useful information for understanding territorial metabolisms would be generated, and there would be a powerful incentive to recycle materials and to use local labor.

This leads me to the second part of the question: are we able to conceive of a strategy for making the most of resources? One that would push a territory-actor to make the transition to a "user society"? Could it contribute to the systematic replacement of commercially-purchased goods by locally-provided services? Would such a strategy not be impotent when faced with globalized production? To answer these questions, I would like to suggest three paths.

The first concerns the substitution of goods by services at the local level. With the spread of the internet and the rise of oil prices, carpooling is becoming more widespread. A system of free publicly owned bicycles, which could eventually lead to network of free publicly owned cars, would partially replace privately owned cars and would broaden the range of public transportation services. Urban heating, which relies on burning household waste, is replacing

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individual heating units. An active policy of heating regulation, of the kind practiced in Lausanne, where local government's support for renovating old neighborhoods through insulation and the training of the local construction industry ultimately amounts to replacing a good with a service.

The second path relates to "upstream" control of production processes. The buyer's power, as well as buying's political and ethical significance, have been repeatedly confirmed over the years. These realities manifest themselves in various ways. "Citizens' campaigns," which sometimes go as far as boycotts—I mentioned the case of the offshore Shell drill earlier—have revealed themselves to be very efficient at threatening producers with short-term losses in sales and, in the long run, with loss of professional reputation.[30] In the producer-distributor relationship, power has passed from the hands of major and increasingly concentrated corporations to distributors, who for thirty years have undergone an even more intense process of concentration, making the negotiations between consumer organizations, local government, and major distributors of new strategic importance. The role of "upstream" orders can be seen in the relative weight of public purchasing. Thus, notably in Europe, the trend among major local institutions (for instance, municipalities and hospitals) towards increasingly buying organic farm goods for food service establishments benefits local producers[31] and plays an important role in the redirection of agriculture. Similarly, the decision that some cities have made to convert their computer networks to freeware and Linux sends an important signal to computer manufacturers.

Another important technique for "upstream" orders that will be relevant to territorial oeconomies in the future is group orders. They are developing rapidly with the spread of the Internet. Previously, they served to strengthen consumers' ability to determine prices. This

[30] John T. Merlin, "The No Dirty Gold Campaign: What Economists Can learn from and Contribute to Corporate Campaigns ," in the *Economists of Peace and Security Journal*, Volume 1, 2, 2006.
[31] Site www.alimenterra.org.

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practice is known as group purchasing. But it is not hard to imagine that on a territory, where the odds are high that potential users might actually know each other, they could be called upon to create new collective services, such as carpooling. Now, employer groups are being started. Once oeconomy's goals and modalities are widely shared and territories begin to take the long term into consideration, innovations will inevitably blossom.

Information, with work and natural resources, is the third type of resource mobilized by territorial oeconomy. But since information is immaterial, can the territory-actor do anything to mobilize it? The answer is unquestionably "yes." To say in effect that information's transaction costs are currently approaching zero does not mean that the cost of accessing relevant information is zero. In fact, intangible capital is usually quite valuable. Yet one of intangible capital's most important roles is precisely to reduce the cost of accessing reliable and relevant information by spreading the costs of market access (those, for instance, that industrial districts place on small businesses), which can be achieved if there are collective means for tracking technological change and if collective guarantees are used to facilitate access to financial markets.

Today, companies tend to emphasize knowledge management (now a fashionable idea), shared learning, and the "learning business." All these concepts are easily applicable to territories. Similarly, awareness of local opportunities is very important information. There are, of course, yellow pages and all kinds of local exchanges—for housing, relationships, employment, buying and selling of all sorts—but territory-actors must go further. Flows of exchangeable information that is reliable and relevant (a feature of "islands of trust") is an essential characteristic of cohesive communities—those where the interaction between stocks of intangible capital and flows of circulating information is the most intense.

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5. Territorial Oeconomy and Systems of Governance

After having considered the oeconomic role of territories in mobilizing capital and resources, we must consider the role that governance plays in the various categories of goods and services. The essential has already been said: social capital is characteristic of fourth category goods, water and soil exemplify second category goods, and so on. I will limit myself to reiterating what I explained in chapter 2 on systems of governance. Territories are almost always essential to these systems.

Let us reconsider the examples in chapter 2 (maps of which are located in the annex).

In the case of the climate and the outer atmosphere (see map), the stakes are global and must be subject to global governance. Yet climate change is the result of the daily activities of men, animals, and plants. This leads us to the idea that individuals are responsible for one's own activity, which leads us to individual quotas; but these quotas must be negotiable, an extension of the market for emission rights that now exists at the level of states and corporations. Territories are the appropriate level for making emission rights communal: compensation for quotas occurs first at the local level, then extends to broader and broader levels, until the global level is reached.

As for biodiversity (see the map), the situation is similar: maintaining natural and domesticated biodiversity is an emergent property of the system, an outcome of the sum of individual action. The mutualization of seed and genes, on the other hand, has an essential role to play. The idea that a territorial ecosystem has its own biodiversity makes perfect sense. It results

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both from individual practices—for instance, the kind of agriculture one practices—and from territorialized practices: the maintenance of protected natural spaces, the elimination of barriers restricting the exchange of genes (such as frog columns across highways or salmon stairs), and the organization of seed and animal stem cell exchanges. Territories play an increasingly active role in preserving apple varieties or cows that are typical of their regions. This is a very important factor in biosphere management, one that requires "open-closing": opening by intermixing, closing by preservation. The governance of the two other goods and services, water and experience, each representative of its respective category, has been dealt with repeatedly in this book, so I shall not return to it. Water management combines the principles of justice and efficiency. It is at the territorial level that this combination occurs. Experience management is central to the development of intangible capital.

6. Territorial Oeconomy, Democracy, and Citizenship

Is it possible to speak, without twisting the meaning of words, of a territorially-based "oeconomic democracy" within a globalized system? Not only is it possible, it is essential. This stems from our claim that territories will be the pivotal actors in the oeconomy of the future. If the pivotal actor is unable to make decisions, can we call it an actor? After all, to be an actor means to be capable of defining a project, of giving oneself a long-term project that can unite and inspire each individual's own initiatives? And if this vision, which is so decisive for a community, cannot be defined and conducted in a democratic fashion, then democracy is little more than a purely formal residue from the era "prior to globalization."

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In the previous chapter, I showed how the principles of citizenship and democracy applied to oeconomy, yet without specifying at what level these democratic procedures should obtain. I simply suggested that, as the idea of governance implies, these procedures should be implemented simultaneously at various levels, in a way that ensures both a maximum degree of autonomy and diversity, on the one hand, and cohesion and unity, on the other. I will now consider these ideas as they relate to territories.

Why is any effort to link economy with local democracy met with immediate skepticism? Because we remain trapped in a compartmentalized mental framework that distinguishes between the economy on one hand, and territories on the other. As for the economy, the media constantly drills into our heads the idea that there are no alternatives. The world market is unified. Everything is over our heads. The economy is governed by scientific laws, and we can no more subtract ourselves from these than from the law of universal gravitation. At best, we can take advantage of the opportunities that globalization’s great game offers us. And too bad for the losers.

As for territories, the habit of associating democracy with local government leads us to assume that linking the economy to local government necessarily means direct economic action on the part of local government. Yet the trend in modern societies, which in France is actually legislated, has been for local government to relinquish action, at least direct action, in the economic realm. In any case, it has given up the kind of management companies (exemplified, for instance, by municipal slaughterhouses) that existed during the interwar period. In the early eighties, I was the assistant director of the urban affairs directorate of the French ministry of housing and equipment. I was specifically in charge of real estate issues. In the Paris region, we were at the time still managing land that the state purchased after the war to implement its urban

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program, particularly in relation to the severe housing shortage. Neither suburban municipalities nor the building sector could do anything, so the state, by necessity, accepted the role of a real estate promoter. Needless to say, public accounting, given the kind of centralization of decision-making that this entailed, is rather poorly suited to the task! This is the reason French lawmakers decided to end the direct and often reckless intervention of local government into the economic sphere and to favor indirect action instead—i.e., commercial companies with public capital, semipublic companies, or the delegated management of public services. European legislation is headed in the same direction, as it hunts down anything it suspects might be protectionism in disguise.

We must free ourselves from two mental ruts: the first states that oeconomy gives local government no choice, and the second sees territorial involvement in oeconomic choices as a return of municipal socialism.

Ridding ourselves of these ideas will allow us to distinguish properly between oeconomic choices that should be made by public authorities narrowly construed—law, taxation, investment, the management of public services—and those which should be made by territory-actors, which will require new institutional arrangements. This does not mean that insofar as they are also a public authority, local governments will not benefit from new freedoms and means of action. We have already come across two significant examples: transferring taxes collected on the basis of work to the consumption of natural resources and creating local currencies, or, at least, tools for tracking local exchange. These two possibilities imply changes at the national as well as the European level: one cannot initiate major change at the territorial level on the premise that “all other things are equal.” It is by defining the relationship between oeconomy and

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democracy at a territorial level that one can best identify changes that must be undertaken at other levels.

In the preceding chapter, I explained, drawing on governance's general principles, that the very nature of democracy and politics has changed as a result of modern society's increasing complexity. The traditional emphasis on the moment when a decision is made—i.e., on a choice between two well-defined alternatives—must give way to an emphasis on the procedures whereby a solution that satisfies the greatest possible number is reached. This shift does not relieve political authorities of their decision-making responsibilities, and even less of their responsibilities in the realm of taxation and law. On the other hand, recognizing that the most important decisions are made earlier, in the very process of elaborating political choices and perspectives involving multiple actors, changes the nature of the decision, which is more like a drawing up a negotiated agreement than a sovereign choice between different solutions.

A consequence of this new perspective is that public authorities no longer have a monopoly over the debate process. Democracy opens itself to new methods, actors, and sources of legitimacy. Even so, public authorities remain best positioned to organize an ongoing democratic reflection-process on oeconomy and society continues to recognize their initiative-launching prerogative. It is by showing themselves worthy of launching initiatives, by developing a new professionalism in leading this dialogue process that elected democratic authorities well best consolidate their legitimacy. In saying that they lacked legitimacy, I simply wanted to show that unless elected local authorities show a willingness to grapple with a set of issues with which they are not familiar, other forces and other actors could step in to fulfill this role.

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While analyzing the relationship between oeconomy and democracy in the preceding chapter, I proposed ten questions that might be usefully debated. It would be fastidious to consider each in turn. I will keep them in mind here simply as background.

Everything begins by organizing a public debate: who are we? And who do we want to be? This is the point at which things become intelligible and when dialogue begins—two of an actor’s three characteristics. The previous, foundational question is indeed: do we want to be an actor-territory? Are we prepared to give ourselves the capacity to analyze and to act? Do we have the political will, in the deepest sense of the term, to become this actor? The main precondition for a territorial community that aspires to become an actor is the acquisition of tools for observation and analysis. Can the community explain the four kinds of capital on its territory and the ways in which they change over time? Can it describe and measure how the territory mobilizes natural resources such as work and information? Does it have some grasp on the idea of territorial metabolism, i.e., of the ratio between used and usable exergy? How would it document the various categories of goods and services? Does it have a sense of which systems of governance are appropriate for each? The first step is a difficult one, for reasons mentioned previously: the information that a society has about its own functioning is itself a byproduct of current institutional arrangements and of the day-to-day operations of the organizations that fall under their jurisdiction. Consequently, real change requires an initial investment in new means of information and a new outlook. Without such investment, one locks oneself into the status quo, constructing a perspective on society that is bound up with past modes of thought.

In this book, I have tried to show that the cost of this initial investment can be reduced if one draws on the insights born from numerous critical perspectives that have surfaced over the

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past twenty years: ideas about alternative ways of measuring wealth, ideas about material flows, ideas about the difference between wealth and well-being, territorial analyses of entering and exiting flows, efforts to understand the nature of intangible capital, etc. But I would add that developing a preliminary understanding of territorial metabolisms is in itself a form of civic duty and should be seen as such: it associates all actors in the project of building a kind of database, relating to public purchasing, private consumption, or corporate monitoring of material flows. Democracy cannot exist without collaborative investigations.

In terms of strategies for change, this first step corresponds to the “awareness” stage. The new perspective—on the nature of capital, resources, the internal circulation of wealth, and the pitfalls of current systems of governance—results in the elaboration of a shared vision, the search for internal and external partners, and the identification of the first tasks to accomplish. This is the stage at which that foundational question that each community must ask itself is posed: do we want to be an actor? Do we have the will to take collective advantage of the potentials that the new globalized oeconomy has to offer? Are the bonds uniting us, born from chance proximity, so tenuous and abstract that we would prefer to throw our lot with other levels or with groups with which we share philosophical, religious, ethnic, professional, or other ties? These questions are not only legitimate, but are unavoidable. To be answered, debate must be inclusive, fully incorporating the three social groups that globalization has created: those who are mobile and well-equipped to take advantage of new opportunities; those who are less mobile and qualified, who fear that they may be globalization’s losers; and those who are not mobile but are protected, who believe that the debate does not concern them.

In the course of elaborating a long-term vision, the problem of organizing work recurs constantly: in the ability of territories to alleviate social exclusion through territorial pacts; or, in

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the question the relative importance, in territorial oeconomies, of value added by familial and domestic work, of the social and solidarity economy, and of business in its more traditional form. The images used to illustrate the idea of exergy, such as the grandmother mending socks or farming managed according to a family man's principles, evoke, moreover, the ability of small, often family-based, human groups to make the most of their environment's resources. Here, too, an historical perspective helps free us from the twentieth century's false alternative between domestic and salaried work, an opposition reinforced by the ambivalence of salaried work itself, which at times is seen as emancipatory and at others as alienating. Thus any territory can create new perspectives and make its own choices as to how to allocate the three kinds of human labor.

I think we are headed towards formulas that combine different kinds of work. A recent dissertation[32] makes an argument that at first glance would appear paradoxical: it is in paraprofessional activities—work one does for oneself, helping others, even black market activities—that people are mostly like to feel pride in their skills and professionalism. Over the next few years, mixed forms of work are likely to proliferate: cooperative training; support for developing multi-purpose skills; creating workshops for sharing supplies; advice checks; associations of familiar work and professional work; the growth of self-employment or partial self-employment in the service sector, notably computer technology; and local exchanges. From the perspective of territorial oeconomy, the key point is that all these different forms of work can be placed on a single level.

On this basis, the vision and first steps can cut in different directions. To attempt to predict them would contradict the very method we are proposing. But let me at least mention the tools that this approach has at its disposal: redirecting taxation; organizing local currencies;

[32] Dominique Lefrançois, "Le parking dans le grand ensemble ," a doctoral dissertation in urban studies defended on December 7, 2006, at the University of Paris XII, Val-de-Marne.

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developing intangible capital; redirecting public purchasing; defining precise goals for reducing the share of materials and energy in consumption; developing closer relationships with world territories that provide labor and resources that are incorporated into goods that are consumed locally and with regions that buy the territories' exports. The possibilities are endless.

In conclusion, let me mention a question for which I do not have a clear answer, yet which strikes me as essential: that of the relationship between collective and individual preferences. Our schizophrenia—i.e., the contradictions between what we believe as citizens and what we think as individuals—is apparent at every level. Robert Rochefort[33] emphasizes this point in several books, showing how if consumers are less passive now than during the golden age of mass consumption,[34] the contradictions between their attitudes as consumers and their outlook as citizens remain deep.[35] I don't think this can be reduced to the classic tension between one's heart being on the left and one's wallet being on the right. Consider two examples: organic produce and transportation. Clearly, we will only be able to create a sustainable society by accepting that a greater share of our budget be spent on food, thus showing our willingness to pay the price for preserving the planet. The option between consuming healthy products and vacations half-way around the world is an individual choice. On the other hand, the paucity and dispersal of organic farms, as well as the weakness of their gathering and distribution chains, increases their transaction costs and thus restricts organic produce to a niche market. The cost differential is great enough to make organic produce, a healthy food, too expensive for many families. Only a collective strategy aimed at supporting the development of organic farming chains and a partial reallocation of health expenditures in favor of healthy food (including group

[33] Rochefort is the director of Credoc (Centre de recherches pour l'étude et l'observation des conditions de vie, or the Research Center for the Study and Observation of Living Conditions).
[34] Robert Rochefort, *Le consommateur entrepreneur*, Odile Jacob, 1997.
[35] Robert Rochefort, *Le bon consommateur et le mauvais citoyen*, Odile Jacob, 2007.

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dining) will make it possible to restore a balance between our choices as citizens and our preferences as consumers. The same is true of transportation. I mentioned families who were placed in a difficult position when gas prices increased, as high housing and property costs in areas with good public transportation forced them to live far from city centers. It is difficult to reproach people in such situation for the gap between their (hypothetical) convictions and their practices. The approach of democratic oeconomy must be to broaden our thinking about collective preferences. More generally, oeconomic democracy must seek to reduce the contradictions that, in the case of work, create considerable anxiety for many of us. Thanks to the Internet, group purchasing is on the rise. What we still need is imagination, followed by imitation. Why not, for instance, imagine new kinds of partnerships between local communities, distribution chains, and citizens' groups as a means for determining collective preferences? We could then use the predictability of group purchasing to redirect our consumption. Why should it be producers and distributors who, through promotional campaigns, completely determine these choices?