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What is Knowledge Society?

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The answer to this question seems obvious as long as it is not raised. An answer is now well established: a knowledge society is taken for a knowledge economy based on science and technology as well as on the business, legal, financial environment required for its growth and sustainability. A further line of reasoning is also well known: this knowledge economy requires a new type of collaboration between government, firms and universities (the "triple helix"); it is a regional phenomenon both below and beyond the Nation-State; this evolution creates new geopolitical hierarchies, new inequalities at home and worldwide. This is indeed a description of what is taking place. But these answers have preceded the question, which asks what is emerging around us, in Silicon Valley and other knowledge-based regions.

From knowledge economy to knowledge society

In these answers, the shift from "knowledge society" to "knowledge economy" is taken for granted. But this shift is far from obvious. First, knowledge is indeed an ambiguous notion. It includes science and technology for sure. But science and technology are embedded in an institutional environment, a network of legal, political, economic, cultural (including religious) rules, regulations and values, which open possibilities and also create constraints. In the daily work of research, development or teaching, these regulations are ways of doing and organizing things, of discussing and negotiating in order to innovate and go ahead, to oppose or even prohibit. These various formal and informal practices are themselves types of knowledge and they are now investigated as such by human and social sciences. They are researched, taught and debated. From this perspective, knowledge is a social process based on the present reconfiguration of relations between science, technology, human and social sciences.

This means that knowledge encompasses many different disciplines as well as their interactions in various settings and situations, within universities, between universities, firms and government agencies, between the media and the population, between communities. These open interactions generate further knowledge. Information and Communication Technology has reinforced this process by constantly overcoming its limitations. This common knowledge is the level of aggregation of these interactions at a given moment in a given place. It is collective but not unified, common but not universal, constantly evolving. It is too complex to be summarized by a Master Thinker in a book, a course or a memo. It is a flow in which we swim and which we create here and now at the same time. Still knowledge has a shape and a frame: it has borders, it structures and filters, it opens opportunities and closes others. It acts as a collective intelligence typical of a knowledge society. Knowledge production and distribution are becoming the infrastructure of industrial societies.

The epistemic turn

The mutation of the role and organization of knowledge in advanced

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industrial societies is still difficult to understand beyond its present industrial and social impact. This is a problem we all have in common. To reduce the idea of a knowledge society to a knowledge economy is to reduce knowledge to science and technology, plus business, finance and industrial property rights. The real novelty is the new knowledge of science and technology built within human and social sciences since the 1970ies. We have learned society cannot be separated from the knowledge individuals produce on its history and future, its organization and institutions. Knowledge and society are the two sides of the same coin. My experience of the world is based on the fragment of knowledge I am able to assimilate and communicate according to my place in society. Knowledge is not something that one keeps for one self like a secret. It has value only if it is shared and debated: it is a feedback effect on the people at its source. This is why knowledge empowers people and transforms individuals into collective actors. It requires individuals to share what they experience, to be not only informed but also *exposed* in order to justify and enlarge their experience. This is also why a knowledge society generates new types of inequality and segregation. We all collectively suffer from these inequalities because, even on a small scale, they reduce our collective capacity to further generate and share knowledge. The digital divide is far less important than the knowledge divide fracturing our world. People might access the Internet in the most remote places: it does not mean they will have the knowledge to participate in return to the global process of knowledge production and distribution. Technology is never enough even it is always part of the solution.

Of course, one way or the other, knowledge has always played this role. What's new then? It is not the role played by science and technology. What is new is not new technology: it is a different conception of knowledge. Science and technology are increasingly understood from *outside in*, from the point of view of new products, of our behaviors and desires (Apple or Sony understood this before the others, they still surf this wave), from the point of view of society and culture. This is not a cultural turn: this is an epistemic turn. When ICT builds on every aspect of our life and work, when biotech grows in our bodies and minds, a mutation happens. To think that these technologies are dominating us, submitting our autonomy as subjects, is short sighted, a repetition of a romantic horror story. By becoming embedded in who we are and what we do, they become parts of our projects and goals. This is what knowledge has always achieved. What we do and desire, the behaviors we invent give sense to technical development. It gives technology a present and future. This is of course what creates new markets. To think that marketing wizards are going to adapt the population to every innovation of the high tech industry is foolish: the age of the New Industrial State and its marketing prowess is behind us. This change has severe drawbacks: it generates new divides, new class behaviors.

R&D building its autonomy

What does all this mean? I explained that knowledge encompasses in a society many different activities and institutions: education, research, universities and firms, culture and daily life, politics and government, etc. Joint research programs, exchange of researchers and students, outsourcing, industrial property rights have become the basis of new international relations policies. That so many aspects of advanced industrial societies are involved means that R&D activities become more and more aggregated, to the point of forming a specific sphere of activities and an increasingly autonomous function in society. Autonomous does not mean separate or apart: it means that this sphere has its own logic, that it slowly builds and asserts its specificities, its own values, interests and regulations. But this does not imply that the high tech sector will soon rule society. It means that it is redefining its relations with the other spheres organizing society, with politics and government, with the economy and also with civil society and religion. This is effectively a new "grand transformation" on the scale of the rise of industrial society in the early 19th century. This goes far beyond the formation of a knowledge economy. The epistemic turn can be best understood from an anthropological view of Euro-American societies.

The history of Western societies is the history of spheres of activities, which became more and more specialized and which became able at a certain

point to organize themselves from within. This is well documented: politics became an autonomous sector of activity, with its own goals, principles and values during the Renaissance in Italy when it separated itself from Church and organized outside religious power. It did not cut all relations with the Church; it renegotiated its relations with it and their distinct roles. Then in England, in the late 17th century, individuals understood themselves as constituting a society and this society claimed and shaped its autonomy when it theorized itself as distinct from Government, competent to redefine its relations to Government and even to question its organization. Religion had once again to adapt and it did. This evolution gave birth to the American conception of society and government and it is still for many people an ideal to achieve. This acquired autonomy of civil society from Church and Government opened new possibilities and a new phase of development. It also created tensions and conflicts of power within countries where this evolution took place. It also generated wars between countries in Europe.

This mutation was also the historical impulse to develop economic activities on an unprecedented scale. This mutation is the source of present Euro-American societies. According to its particular history, it deeply transformed each nation where this process took place. Each nation tried to rebuild itself around this new scale of economic development. This process is still transforming the world. Based on their culture or religion, some countries resisted or even rejected this disruptive evolution. Today the economy is driving the evolution of all advanced industrial societies. It is precisely in these societies, in some specialized regions, that a new phenomenon is taking place: the rise of the knowledge sector is understood as generating the basis of the long-term sustainability of the economy. But the emergence of R&D as a full-scale sector is already overcoming its relations with the economy and it is changing its relations to society. The knowledge sector is becoming more and more autonomous. It starts asserting its own interests, goals and values. The actors of these evolutions create a new relation to society; they also bring a new vision of society and its goals, of the economy, of government, of the environment and also of religion, spirituality or morality. Knowledge is reopening our societies beyond a vision of its future based on its economic sector. By transforming the way individuals think, interact, communicate, by transforming their bodies and managing their health, the R&D sector reshapes not only its relations to the other spheres of society, it also transforms these spheres themselves. This means that the divide between knowledge regions and other parts of our countries, other parts of the world, is growing fast. This evolution can also generate dangerous counter-effects.

The epistemic turn is a new "grand transformation". This is our future. This is also generating turmoil, rejection and despair in many parts of our societies and the world. A knowledge society is emerging but it still has to take shape, to develop institutions, to articulate a shared vision of itself and of its relations to others. My opinion is that we need first to learn how to understand it, to develop the proper concepts and problems required to describe, explain and debate what is happening. We need also to reorganize our knowledge institutions and universities in order to research these issues, to collect knowledge and experience and also to train students and future specialists. How could we not see that a knowledge society can only fully emerge if we are able to develop the knowledge and competence it needs in order to take shape.

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