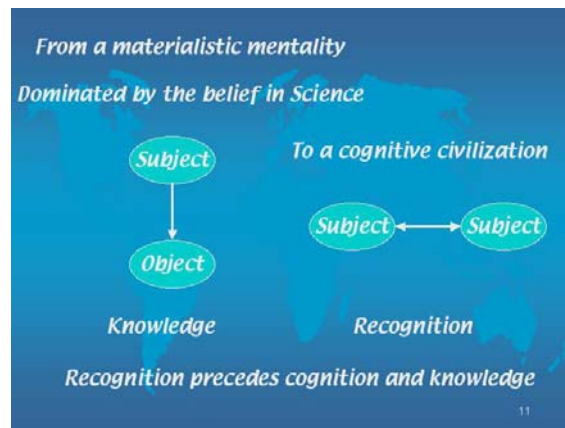


2 THE ROLE OF METROLOGY IN A COGNITIVE SOCIETY

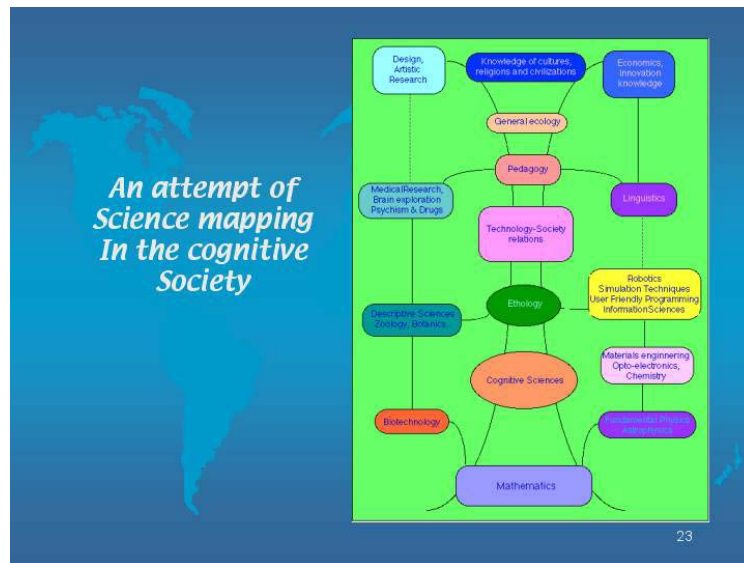
Thierry Gaudin

Most of the work I will present has been made for the French Ministry for Research in order to have a foresight on the 21st century. The first point I will stress is the speed of change. We don't believe in acceleration in history. Let me take an example. At the time of the French revolution, there were balloons going for the first time with man in the air. It was the flight of man which was a dream for millenniums that at last realized itself. Of course next year there was an enthusiastic production of plates, of garments, of tissues for skirts but you had to wait for one century and twenty years to have dirigibles, Zeppelin in Germany and Santos-Dumont in France and you have to wait one hundred year more to take its place into useful industry which is the project of cargo-lifter in Germany, the dirigible used as a crane which can transform of course all rescue processes and may be the building industry.

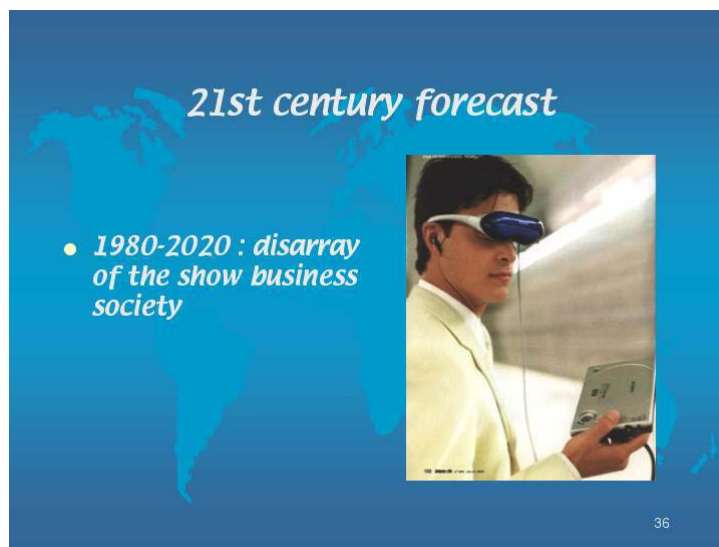


So the time lag of a change in the technical system is more than two centuries. A technical system transition takes this time lag and when you look at the past, twelve centuries or six centuries before Christ when you had a global change in the technical system, it was the case.

In the case of industrial revolution, we have also the four poles of the technical system: materials, energy, but also time scale and man-biosphere relationship. In the industrial time, materials are still in cement, combustion for energy, and the measurement of the second or tenth of a second, and microbiology from Pasteur at the end of the XIX century. But this industrial revolution which started around 1750 is not yet completed at the scale of the planet nowadays and we have the signs of a new technical system revolution which we have called the cognitive revolution. The four poles are changing: materials, energy, but also the time scale which is the nanosecond now, and will be the femto-second in some ten or twenty years from now, and also biotechnology which goes deeper and thinner into the exploration of living matter.



So this is a global change which is a change not only in technology but also a change in civilization. We will explore that change saying first that it goes from a materialistic mentality which was the one of the industrial age dominated by the believe in science with this knowledge system, subject and object, to a cognitive civilization which is a relationship between subjects and also the recognition process and not only the knowledge system. It is not an information society, it will be a recognition society, which is quite different. Of course this leaves place to very small enterprises and values are autonomy and recognition ad of course the infrastructure is made of telecommunication.



The networking of this civilization deals with an amount of information much bigger than the former one. A language, when we speak normally, would be of 60 000 words. To describe modern science and technology, you need 6 millions references which is one hundred time a language. So no expert can dominate totally the modern science and technology. Intelligence at all levels is necessary and of course you have the phenomenon of the Babel tower. We are not living in an information society but in a disinformation society because no brain can handle the totality of the knowledge and so everyone is the victim of disinformation processes. The classical economic theory is no

more valid because this theory assumes the necessity of perfect information and, in this ocean of information, information is mostly imperfect. The basis touches daily life. This is of course a characteristic. Fat-pride conference is a persuasion therapy which is contradictory to the weight-watcher effect which is the go-back to measurement.

You can find on Internet medical images modeling the brain: it gives the amount of knowledge which is immediately accessible. But of course technology creates a distance between human beings. All sciences now, and in the past also, have relied on metrology. But now, we have the femto-second system.

As you know the recent Nobel price Cohen Tanuggi demonstrated that everything now is under the model of vibration. This changes the way we are looking at the universe and the way we are looking at ourselves. The other difference is that, in the time of industry, mines and crude oil were the basis on which you can build industry and nowadays, in a cognitive society, measurements are the basic input. This is the center of my message: industry relies on mines and crude oil, cognitive society relies on measurements.



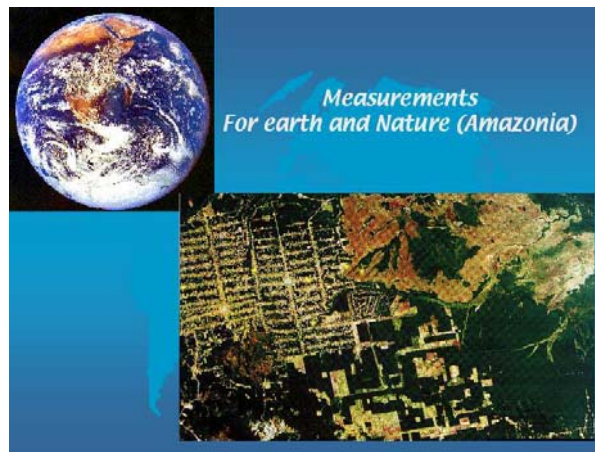
We need also measurements for nature because the anxiety for nature is growing. The second world summit in Johannesburg, held some weeks ago, shows how things are growing just now. Let us talk also about globalization. If we look at a world map made ten years after Christopher Columbus trip to Cuba and other islands, it shows that the will at that time was to make a world map in order to organize world trade. But the first globalization was much older than that: it was the silk way from Mediterranean region to China. Silk way started during the 6th century before Christ and it was operational at the second century before Christ. The center was Samarkand in Uzbekistan.

The second globalization was the maritime one, with Vasco de Gama, Columbus, etc. and the third globalization is nowadays electronic. But the idea of globalization very ancient. It goes back to the Mesopotamian civilization which created metrology for trade. They invented trade, accounting, school, courts, business and the first recorded measurement inspector was living 2700 years before Christ in Ur in the center of Mesopotamia.

In the agricultural civilization, the territory is the lands. In the industrial civilization, it is the capital and the property of the machines. In the cognitive civilization, it is

intellectual property and the place you can in the mind of the people: patents, brain, copyright. This is an acceleration of competition with the rule 'the winner takes all'. You have or you do not have the pattern. This an acceleration of capitalist concentration in the first stage which hardens the forecasts of the next coming twenty years. There is another phenomena: when a new technical system comes on, it marginalizes the work force of the ancient technical system. You have a slow period of exclusion which started in the 1980s and is now worldwide a very important phenomena creating all sorts of disorder.

The responses can be of many kinds. The first one would be to create local moneys instead of global moneys like you have nowadays in Argentina because of the crisis.



But in the nineteenth century, when you had this crisis and the European revolution of 1848, what occurred is that the ruling class started a new policy, a very hard and voluntary policy, with education and public works like the Suez canal and all the urbanism like Haussmann made.

So we can guess that the following years will be of that kind. The first stage between now and 2020 will be the disarray of the show-business society. The second stage will be education and public works society. And may be, the third stage will be a creation society at the end of the XXI century. To sum up my presentation, I will say that the result of that is that the transition to the cognitive society will be a transition from homo cocacolansis that we have now to homo sapiens.

The discussions that followed Mr. Gaudin's presentation - as well as all that was said before and after the coffee beak - were unfortunately not recorded.