



CITIZENS AND GOVERNANCE IN A KNOWLEDGE-BASED SOCIETY



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Inventory of fundamental methods and tools
of spatial analysis and of processing
of territorial information within the social
sciences and humanities in Europe

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Introduction

The definition of what we call “methods” keeps posing a problem and often cause rather long debates and productive thinking. It will be necessary to contemplate a more important coordination with the WP6, which is in charge of “the design and dissemination of territorial intelligence methods and tools accessible to the territorial actors and respectful of the sustainable development ethics”. This WP activity is located upstream of the WP4 works, and it would be advisable that Wp4m and Wp4i on information work in a retroaction loop way. Indeed, within the Wp4m, we classified the methods according to a fundamental logic and whilst talking about our representations of territorial actors’ expectations, but it is obvious it would be useful our work could be filtered thanks to the WP6 work.

The works we made during the second reporting period concerned three main themes:

- Interpolation at the service of territorial intelligence
- Interactive cartography
- Observation

It is on the third theme we advanced the most, under the auspices of **Alexandre Moine** and **Marie-Hélène de Sède Marceau**. Here, we will present a general survey of the conceptual thinking we led.

1. Interpolation at the service of territorial intelligence

About interpolation at the territorial intelligence service, in geography, in economics and in the vast field of territorial intelligence, the information that is available to make maps and spatial models often concern administrative units (collectives, regions,...^o). Cartography of such data does not pose any problem as it results from the crossing between statistical tables and vectorial images that archive the limits of the filled-in spatial units. In other fields, it is not the case. In the environment field in particular, the information is only available in few measurement points (meteorological stations, contaminants measurement stations) that are far the ones from the others. The cartographic representation mode is the only valuable one; it consists in superimposing the measurements result on the precise place where they were registered. Nevertheless, with this kind of representations, we do not have any information on what is happening between the observation points. Consequently, interpolation will try to make the spatial area restitution, what creates important difficulties.

2. Interactive cartography

Speaking about interactive cartography, cartography is a discipline that evolves simultaneously with the sciences it uses. In a first time, the geometry contributions allowed it representing the physical space with exactness. Then, the statistics allowed the representations of the abstract phenomena, by structuring the information so as to graphically communicate them in an efficient way. Nevertheless, some obstacles remained: a scale determination, the information selection, the visualisation from a particular point of view are choices that should be made by the cartographer and that make a map a fixed *ad hoc* document, which eventually only transmits a part of the information that it could include to valuate a territory situation. Presently, the computer-science and the recent technologies offer new possibilities. They are mainly based on the Geographic Information Systems (GIS) and on the experience of the Exploratory Data Analysis (EDA) or of the Exploratory Spatial Data Analysis (ESDA). Here, the choices do not devolve to the cartographer, that is to say the map designer; they can be made by the map reader, the one who thinks about the geographic space he studies, and who constructs the map he needs as his research hypotheses become more precise and are confirmed. The main characteristics of this cartography, which is necessarily multi-media and interactive, and the possibilities they offer can be presently broadly valued in the collaborative and pluri-disciplinary studies that are linked to territorial intelligence, as a tool to help thinking and then making a decision.

3. Observation

Careers in connection with dynamic territorial analysis have evolved in parallel with the technique and particularity the Technologies of Information and Communication (TIC). If “research and interpretation of organization space ways is a major geographers’ task”, [de Sède, 2002], it left us no less than the comprehension of these space organizations is possible by identification and comprehension of actors upstreamed sets, being largely defined by their institutional position or not, as well as by their associated resources and constraints [Jeannot, 2003]. At the same time, the analysis constantly evolving methods, today are reinforced by the increasing information data [Moine, de Sède, 2001], and now it is possible, through certain observation tools, to proceed on fundamental analyses of different geographical spaces [Moine, 2007], without being able, thanks to the same tools, correctly restore the actions logic prevailing and making them territories. And, even in the case of space analyses (without

taking into account the actor's logics), it remains often a set of difficulties to overcome in order to mobilize reliable, comparable and updated information. This way, the observation tools number is increasing, because the data-processing development allows it. Very often they are not conceived in a global perspective permitting simultaneously to: represent territories, observe them, provide a decision-making help and support the local governance. Indeed, it is a question of understanding how a set of steps can be developed concerning the interaction between the actors, but also between actors and data, which they hold and/or exploit, in order to develop one local "territorial intelligence".

We wish to re-announce a set of concepts, in order to clarify the decision-making bases in regional planning, taking into account the present information technologies implementation. Thus, several concepts, conditioning consequently the action, are enounced about the observation question within the installation framework and the territorial action, whatever the themes set approach:

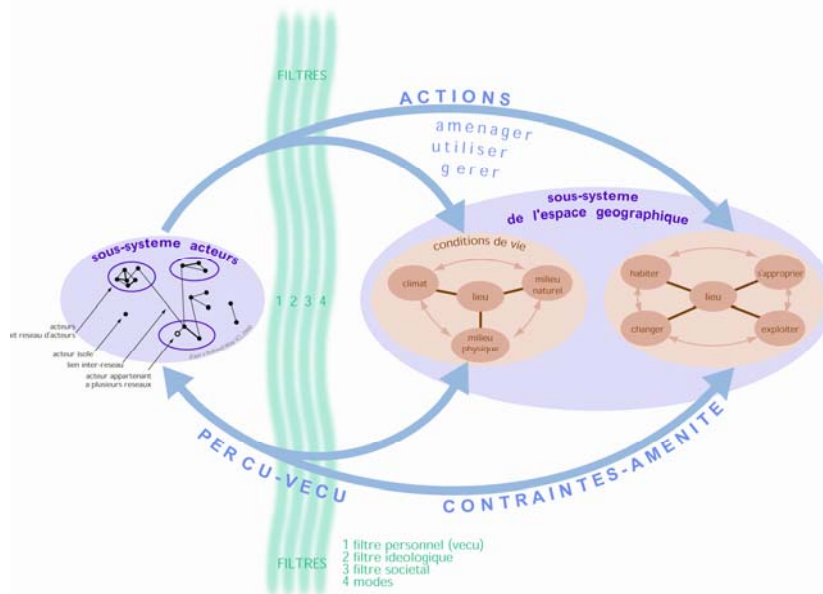
- the first concept of course is the one about territory, it constitutes the methodological base of our thinking and the tools resulting from it, and reveals the narrow interaction binding the actors and geographical space that they use, arrange and manage;
- the second concept, the observation one, raise the step question permitting to follow the territories evolution; how this complex system is represented, and how we interpret the information describing it;
- the third concept, governance, question us about the resources of supporting the territorial actors' thinking, whatever they are, helping them about the concerted decision-making;

Once these reciprocal concepts and their relations are posed, it will be advisable to examine their mutual connection, admitting us, by a global approach, to speak about territorial intelligence, raising the question about the interaction between the actors, the information and the tools placed at their disposal.

4. Articulated concepts for better decision-making

4.1. The territory is a complex system...

The territory is a system, it endorses the set of properties attached to complex systems [Moine, 2006], referring to structure and dynamics, putting forward the question of time irreversibility and its necessary to be taken into account. This system is composed of two absolutely indissociable subsystems, which on the one hand are the actors, joined together by their mutual plays leading to the use, the installation and the management of a second subsystem i.e. the geographical space, composed of places and objects, which interact according to their localization and especially to amenities means and constraints offered to actors by them (Diagramme 1).

Diagramme 1: The retroaction loop of land planning

The loop of the territory regional settlement feedback, in a wide term sense, born from this interaction, it represents in fact the combination between an infinity of positive and/or negative feedback loops, placing the territorial systems in tension, i.e. more or less unstable balance. It comes out from a territorial complexity made of multiple memberships and intersected networks, largely due to the tangle of socio-space operations and the territorial coalitions, encouraged by the States, as underlines it [Cox, 1998]. We are based here on the principles attached to the systems complex, particularly based on the dynamics concept, very organized and strongly interactive. “Such systems, whose organization is made of hypercycles, (multiple encased feedback loops ones into the others), lend themselves badly to an analysis which consists in reducing them in small isolated units. The presence of feedback positive and negative loops confers them sometimes a great sensitivity to external conditions, even to fluctuations, sometimes a certain autonomy degree, which makes them not-controllable, consequently non-predictibles” as Eric Schwartz [Schwartz, 1994] notes it. Thus, geographical space exists in a long time exceeding the territory existence. Indeed, whereas the space structure is made perennial in time, the actors systems and the plays resulting from this seem fluctuating. If we consider three space system temporalities: “*dynamic rapids [...], the slower one’s of the system states succession [...]* and *the longer time one’s determining the systems existence*” [Durand-Dastès, 1999], we can affirm that the long time is the one of geographical space existence and, in certain cases, it can also be the one of territory. The system “territory” with “*capacity (...)*being able to integrate a disturbance in its functioning, without changing its qualitative structure” [Holling, 1973]. Bearing in mind this fact, the system is maintained, as well as its evolution, and if the geographical space has an increasing complexity, particularly caused by the anthropic objects multiplications, their mutations and their frequent delocalizations and relocalizations, the actors systems note an increasing of their complexity, too. By testifying, notably according to [Antheaume and Al, 2005] “on the one hand a wave without recuttings precedent associated to decentralization policies, and on the other hand, a profusion of intervention and mobilization perimeters instituted by the new

territorialized actors known as of the civil company (ONG, associations, contractors groups, etc) and their international partners”.

Consequently, it is essential to throw a continuous glance on the geographical space, in order to ensure a relative continuity between the decisions, which will take the actors following one another a geographical reference space, as much as there can be an organization (actors)disappearance, but project continuity of the already committed one. Thus, the territories, considered as complex systems, are in constant evolution, which induces a second concept closely related to the first one: observation.

4.2. ...that requires the observation tools installation ...

An observation does not exist without actors, therefore without observers, it refers to time and within the specific geography framework, it places space in the center of concerns. An observation is defined as observing action, to consider with a followed attention, the nature, the man, the company in order to know¹ it better. This definition takes all its direction, if we refer to the specific territories question, bearing in mind the studied system complexity. The observation integrates the time and irreversibility concept, it thus acts to observe in the phenomena duration characterized by their evolutionarity [Casanova, 2008]. However, these phenomena must be described with precision in manner to give an account of their evolution with exactitude and without ambiguity. When speaking about complex systems, whose behaviour is particularly unforeseeable, the case of the socio-space systems, the observation must rest on reliable data describing these systems in a consensual way. The observation consists to throw a glance related in a durable way to a given system, described by a set of raw data, which can be combined in order to produce indicators divided by the community. The last ones are synthetic information, fruit of choice and interpretations. Moreover, this carries ahead the indicators question, allowing beginning from multiple and varied data, to represent the use consequences, the geographical space adjustment and the management by the men. The indicators concern several different logics, describing either the state of the system (diagnosis), or the impact on installation policies (evaluation), or possible system evolutions (futurology). In addition, according to their organization with the centre of observation tools, they will make it possible either the approach of themes sets (population, housing, employment, etc), or of issues, those being located at the interface between various themes sets (precariousness for example). Lastly, the observation implies a double information division, upstream the observatory supply, in order to exploit it downstream in a rational way. The data and indicators will influence the perception on the observed systems, and by the fact they will condition our glance and our selective attention. Here, an important feedback loop, binds the perception and the observation. Thus, this replaces the observation tools in the middle of actors systems in tension, within a given territory, i.e. in the middle of governance.

4.3. ... that supports local governance

Governance is a relatively ambiguous concept. It suggests in certain cases the capacity that opposes certain actors in order to counterbalance the traditional action and the disengagement

¹ An action to be scientifically observed (a noted, described and measured phenomenon). An attentive monitoring, on which we subject an alive being, a phenomenon, a system (the Robert, 1992).

relative on governments and on institutions, which controls the states. It also refers to interactions between state and company, i.e. with the public coalition systems and deprived actors, which through coordination steps aim to make more effective the public action and companies more easily governable. This is declined on all scale levels. We consider that the governance approaches to the second definition, and is based on the relations complexity which link the actors of one territorial system, aiming the stability maintain on contradictory relations basis, which requires, at a given time, a consensus in the centre “ *of a continuous co-operation process and compromise between various and conflict interests*” [Smouts, 1995]. It is not simply about a sphere of the particular interests, as defined it Hegel by opposing it to the state: “*In the civil company, each one is an end for itself , all the rest is nothing*”, but an interest combination, taken overall and thanks to a set of rules and/or contracts, does not go against the general interest. For this reason, the governance must join together the set of the gathered actors within a territorial system. It is at the final analysis “*about a coordination process of actors, social groups, institutions, to achieve its own goals, discussed and defined collectively in fragmented and dubious environments*” [Bagnasco, 1997]. It stresses the actors multiplicity and diversity, which interfere or can interfere in the public affairs management, and about what we are interested in, within a territorialized framework, placing the governance with the interface of sociology, political science and of course geography. It is in this contradictory reports context, that the observation takes all its direction, around shared data, jointly validated in order to produce diagnoses, studies enabling the action leading.

Consequently, territorial intelligence is based on these three previous concepts by mobilizing new information technologies. Its base consists in the territory concept, as it was proposed, the actors sets, producing the geographical space organization, according to many constraints, which are physical, but also organisational, and materialized in particular by the many planning documents, orientation or currently necessary territorial coherence. Thus, the territorial intelligence is described at the following way: when it comes to organization of the used and shared knowledge set by an actor set, within the given territory framework, in order to observe collectively for better governance. The territorial intelligence it is presented by a mutualized organization and in knowledge network, in order to support the citizens' participation, facilitating the partnership between the territorial actors for a global and balanced territories solution². However, the territorial intelligence could not be formalized without adhesion with a shared territory vision and especially with common objectives.

As a result, now it is a question of managing to illustrate the problems concretely which are posed within the framework of the observation and which can influence the quality of the governance by the means of the tools performance of decision-making aid set up. The territorial intelligence depends directly on the observation and thus assigns the evolution of the territories by the means of knowledge carried to the actors, and judicious to constitute a decision-making aid. One finds thus narrowly articulated, geographical space, the actors and the governance which binds them by the means in particular of the tools of observation.

² European Network of Territorial Intelligence.

5. The data is in the middle of each concept

5.1. Observation and observatories, towards an interface between reality and knowledge

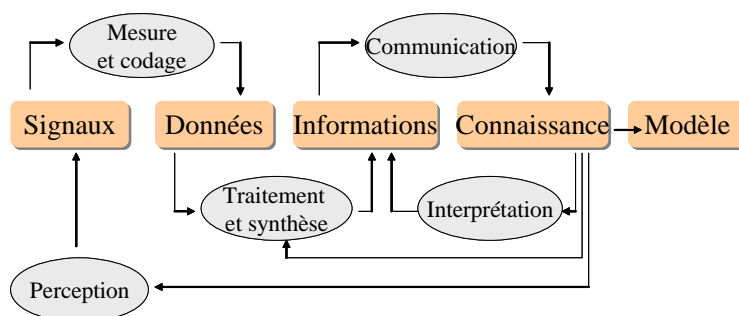
The observatories development, about territory, sociological phenomena or even economic or environmental observation, is closely related to three phenomena:

- the increasingly large data availability;
- the increasing complexity of the used, arranged and managed actors sets and geographical space;
- the growth of knowledge and actions evaluation power expectations.

Thus, from a cognitive point of view, the data availability, coupled to diffusion much easier than the information available by the Technologies of Information and Communication (TIC), place the observation problems in a context needed to be specified.

The cognitive step leading to knowledge creation, perhaps schematized in the form of a continuum on the reality basis (of which we perceive signals) in order to lead to more than a knowledge, to modeling³ (Diagramme 2).

Diagramme 2: From reality up to knowledge (de Sède, 2002)

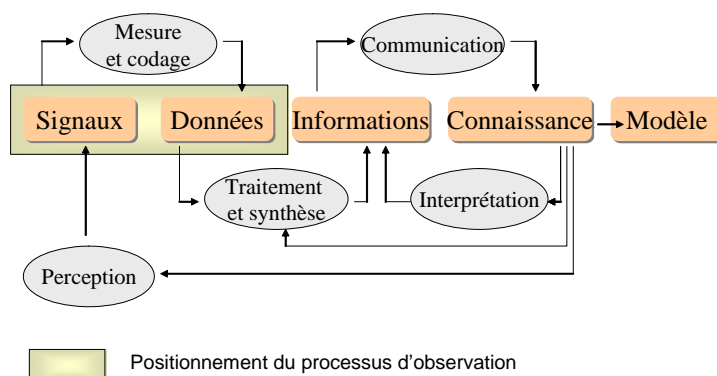


The knowledge acquisition relating to territory, the major objective that prevails over the decision-making can be assimilated to a training operation i.e. a capacity modification to be thought, to represent to build the object of study under the data effect. Research in cognitive sciences and data processing proposes the fact that knowledge is the fruit not only of external data with learning, of interactions with its environment and finally of tools and internal information with this last, in particular tools memorials. As underlines it Piaget [Piaget, 75] quoted by Noucher [Noucher, 07], “*intelligence is only one more elaborate form of the biological adaptation. Thus, the processes by which learners build, their own mental structures are made of interaction with the environment*”. The observation fits in this

³ Indeed, modeling implies to establish models, formalized representations of a reality as objective giving an account of the phenomena in relation between them. This ambition obviously implies the knowledge of this reality.

knowledge paradigm⁴. In order to determine better the observation stakes, its relevance within the framework of territorial approaches aiming to the description, the analysis and more over the decision-making aid, it is important to locate it in this continuum. Formally, an observation, considered as a constant attention paid on a subject but also as a “tool of collection of data”, (National Institute of Telecommunications) is located upstream the process of knowledge generation (Diagramme 3).

Diagramme 3: Observation in the process of generation of knowledge



Integrating the signals reception emanating from the real world and the data production, it influences very largely on the knowledge, because since this first stage it will condition the properties and characters set specific to the data, supplying the decision-making. This evidence however seems very quickly forgotten since the projects of observation are formed. In fact, how much they are, decision makers or more largely in charge of study, technicians, and even researchers to be questioning about this transmutation quality, which makes possible to pass from the felt world to the more formal data's one?

By definition, the observation underlies the description logic. Thereby, in its most current meaning, description consists in gathering the observations made in connection with such or such phenomenon in order to provide a coherent image and as supplement as possible. In fact, within the framework of territorial observatories, it will be a question of representing geographical space in reference to users, developers or managers. Description must lead to a representation as exact as possible to the reality. It is an important phase which proceeds in the observation and prepares for analysis. The quality of the analysis results will depend on the description quality and so, on policies installation or implemented management.

However, there is a distortion between observations, such as they are defined and is used by the set of sciences (sociological observation as much as observation of physical or biological phenomena) and the initiated and practised observation by the territorial actors on the territory object.

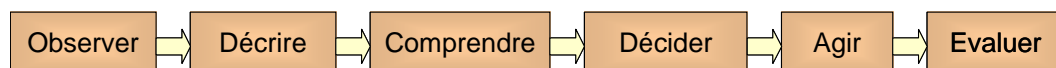
- Firstly, this distinction operates on the observation object itself. Whereas the “scientific” observation seems as an external step of the object itself, the territorial observation proves to be much more complex, since the “observers” “are also observed”. Indeed, many are observatories developed by institutions, local authorities

⁴ A paradigm indicates the problems set specific to an object of study and the techniques of this study.

which finally look at themselves, using the changes on the territories, more or less directly initiated!

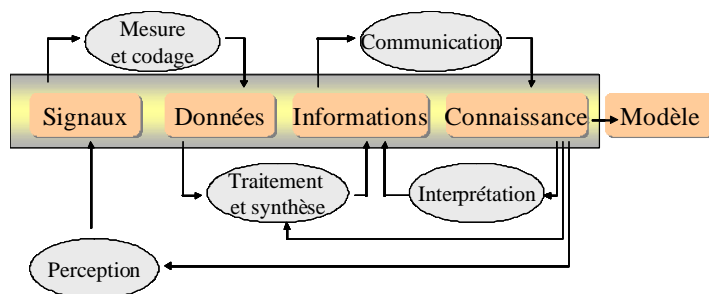
- In terms of objectives, another distinction is essential. Whereas the scientific observation tends toward one first object decoding in sight of its description, then of its comprehension, the territorial observation aims through the mutualisation knowledge, to provide interpretation keys of complex systems represented by territories. As Christian Estrosi underlines it in his short speech about presentation of the territories observatory of DATAR (DIACT today), *“By publishing his first report, the territories observatory answers on several expectations and in particular the one to share better, from now, the available knowledge on territories, too often dispersed or known only by specialists”*⁵. In this context, it is more a question of knowing for understanding, but especially to know in order to act, decide, evaluate (Diagramme4).

Diagramme 4: Action observation



In terms of methods, the observations development does not respond always at the present time of the formalized and validated implementation approach. The projects are based primarily on organizational approaches, whose objectives consist in supporting the partnerships relating to the observation. Then we can assimilate “the observatory” to an organizational device of type “service study”, divided between various organizations and whose objectives consist in regularly producing knowledge on the territory and/or the interest themes set. In other cases, projects are based explicitly on the placement of a computerized tool, type of shared database, on the base there will be produced a synthetic data set, supporting the territories knowledge. Even though, the observation as it practiced within instrumented observatories maybe is not assimilated with the information and knowledge creation (Diagramme 5).

Diagramme 5: Territorial observatories, in the process of knowledge production



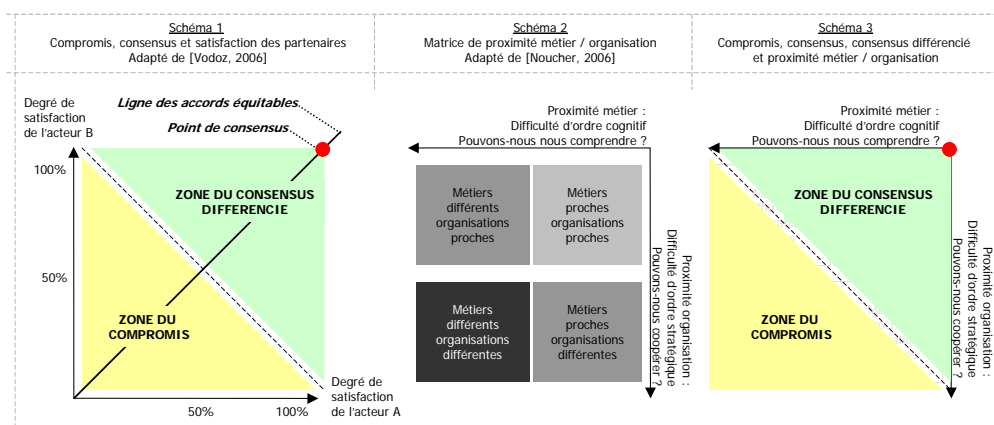
However, in all cases, the objective is to produce together what it would be impossible to produce alone. It is in fact by the integration of multi-source data and multi-sets of themes that the processes and revealing characters of complexity appear. At this title we can quote the

⁵ Source:
http://www.premierministre.gouv.fr/information/actualites_20/presentation_rapport_observatoire_territoires_54646.html, December 2005.

interest of the combination of socio-economic data and technical data on the buildings to develop behavioural indicators on the power consumption question. [Ibrahim and al., 2007]. Another example, the recourse to a combination of financial data, data on mobility as well as “traditional ” data more characterizing the households profile (given of INSEE (National Institute of the Statistics and the Economic surveys)) allowing to evaluate indicators informing about the cost of the distance for the peri-urban household⁶.

Thus, the observation’s territories objectives are connected with a certain form of data coproduction whose mechanisms were identified by Noucher [Noucher, 2007]. This “filiation”, between observatory and coproduction enables us to specify the conditions favorable to the development of essential participative logics within such projects framework (Diagramme 6). As in different socio-cognitive mechanisms, the stake is to understand actors in the cultures and the different professions and often, in the divergent strategies. Thus the governance will emerge it on the basis of the data and the thinking division on the divided indicators.

Diagramme 6: Strategic and cognitive conditions favorable to various participative logics of the geographical data coproduction .
Sources: *Matthieu Noucher, 2007*



5.2. Indicators, revealing of the quality of collaboration

In a context of assimilation of the observation to the coproduction of data on the territory, it is essential to reconsider the concept of indicator, this last being in the center of the step observation.

In the usual vocabulary, an indicator is a data file which provides indicators⁷. As an example, INSEE defines the temporary indicator concept in the following way: “an indicator is an measuring instrument of an economic activity (or a whole set of activities) permitting to continue in a periodic way the evolution of the conjuncture at infra-annual periodicity, like the real GNP, the industrial production, the price level, the unemployment rate, the confidence households index, ... ” (sources: <http://www.insee.fr>).

⁶ This study is currently undertaken by the Agency of Town planning of the Besancon-native Agglomeration (AUDAB), in collaboration with the Departmental Agency of Information on the Housing of Doubs (France).

⁷ Le Petit Robert.

Within the framework, always more complex than the management and the planning of the territories, the public and/or private decision makers ask for objective data to know and understand their competences territories and to evaluate the impacts of the policies that they initiated by their decisions. Beyond the provision of raw data, the indicators design seems like the privileged tool to transmit synthetic information and that is how they become a thinking key elements⁸ and beyond the decision, to see evaluation.

Thus, the indicator concept would underlie the objectivity. This brings back for us to the descriptive dimension observation, which objectives are to restore as most objective as possible the reality. There is a close link connecting the objectivity of description, observation and indicators, whatever the aim in view. However, this analysis must be moderate. Indeed, the data produced whatever the interest's themes, the reference scales,... are far from being objective. They are the fruit of choice, with all their life cycle stages. As underline it [Claramunt, 1997] or even [Joliveau, 2004], reality is instrumented. Indeed, whatever the concerns, the transfer from observation intention to the tool placement, which vocation is always to provide descriptive elements of the real, makes the instrumentation object, resulting from land surveys, sensors, investigations, etc.

Very often, the geographer like a developer or a decision maker directly will be confronted to regularly localised data without to have had any access to the coding modes of initial information, not controlling any of the choices preliminary to acquisition, nor the acquisition methods. In addition, even so it controlled this dimension and that it has the advisability of acquiring itself the data, those one's will be the fruit of choice marking the data life cycle set, the tools and technical reserves for their acquisition with the representation choices, while passing by sampling selection modes.

In addition, an indicator, as INSEE suggests it through its economic situation indicators definition, must provide periodically some knowledge elements allowing, by the fact, carrying a glance followed on the phenomena. The introduction of the periodicity leads us this time to specify the temporal indicator inscription, allowing a true territory day before under observation. Then we speak about follow-up indicators. The questions must go on the temporal granularity of the follow-up, taking into account at the same time the material contingencies (very often materialized in term of cost) and the dynamic clean, ones with the systems under observation.

Lastly, we are in the territories observation field and we touch the proper domain of geographer concerns; an indicator, as underlines it [Joerin and Al, 2001] must allow apprehending the heterogeneity and the phenomena space variability on the territory. This capacity perhaps can be simply controlled through simple cartography approaches based on a spatialization of themes' data sets. But it can prove to be necessary to develop more complex indicators, informing us about the form, the structure and the phenomena's organization. We touch here the indicators' space dimension domain (localization, representations, scales of relevance.), exploited dimension in contexts of mobility observation for example (one can think of indicators of accessibility [de Sède Marceau and Al 2008], built on the basis of localization, distance/time, level of service road,...) and today strongly solicited, in relationship in particular to the complexity of individual peregrinations and with needs to satisfy their requests.

⁸ "Territorial Indicators of durable development", EspaceTemps.net, 08/11/2005.
<http://espaceTemps.net/document1708.html>

So, an indicator is shown as an indicating variable, significant one state even an evolution (rate of variation for example) on a level of given perception and which interpretation is generally done referring to standards or comparisons. It lies within the space scope and temporal scales defined, adapted to the objectives whom it must answer. Thus, an indicator generally refers to zonings and observation frequencies, which can be different according to observers. It is essential to think about the relevance of the indicators according to the scales of concerned analysis. This last remark brings us to the questions of type: “who observes, what and on which time and space scale levels?”, given that that the indicators produced on the agglomeration level can only be complementary to those produced by an area. On the states synthetisation basis, however indicators can answer various objectives, diagnosis with the evaluation and the futurology.

The indicator takes all its direction within the observatories framework which, by definition, allows to interact and to integrate multiple sources data [of Sède et al., 2008]. Its relevance, its synthesis qualities as well as the potential of evaluation which they conceal are a function of the level and the collaboration quality developed by tests brought together around the observatory projects. Thus, considerable observation systems do not go beyond the supply of basic descriptive indicators and offer only very few indicators fruits of the data coproduction, composed of a combined variables set (see example of the IDH or other) fascinating of account time, space, to see both, and founded on a search for common objectives on actors behalf.

5.3. Observatories: a territorial information systems application

The territorial observation creates information, by the means of the indicators production. While analyzing closer the generation of this synthesis information, it is possible to detail the process. The observation can be discretized in four phases differentiated and not proceeding from the same logic:

- The harvest of the data.
- Data storage and its organization.
- Data processing for the production of synthesized information.
- Diffusion of synthesized information in an adapted form, in direction of various targets, (decision makers, managers, citizens,...).

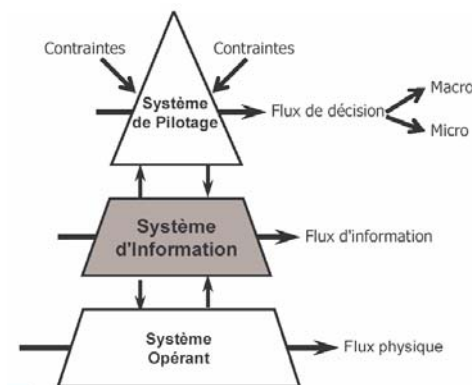
This analysis brings several remarks.

- First of all, perhaps comparable observation with a simple function.
- Then, each identified phase remains basically different and, in the optics of the computerized observation, these ones do not proceed according to the same logic. Storage proceeds clearly of logic “data bases”, which implementation executives fall under the middle to long term from temporal point of view, in the multi-scales from a space point of view and in a dimension multi-partner, from an organizational point of view and theme set [Mennis and Al, 2000]. This brings us back to the concept of territory complexity and induces the implementation of hybrid solutions, specific to sciences and technologies of geographical information, as regards the space dimension control, more traditional since we harnesses ourselves with the themes data set control. The treatment as for it, fits clearly in an applicative, evolutionary logic with the space mutations liking, theme sets and territories organizational characteristic.

- Lastly, at the end of the process, the inputs/outputs around of which articulate themselves flows of information seem the device's "Achilles' heel". With the source, since the building set rests on the system supply in data⁹ Then at the exit, since essentially, observatories are designed to produce information and must answer this expectation.

In this context, the observation tools are registered in the information systems logic, defined as a set of elements taking part in management, the treatment, the transport and the information diffusion. The instrumented observatory can be regarded as an application coming "to water itself" with the Territorial Information system, on the same basis as other types of more targeted trades applications (Diagramme 7). In the company world, these systems are clearly identified as being an interface between the decision and control system, so and the operative system, which one can be compared to managers and to another actors having a direct impact on the territorial system (Diagramme 8).

Diagramme 7: The Territorial Information system (SIT) concept



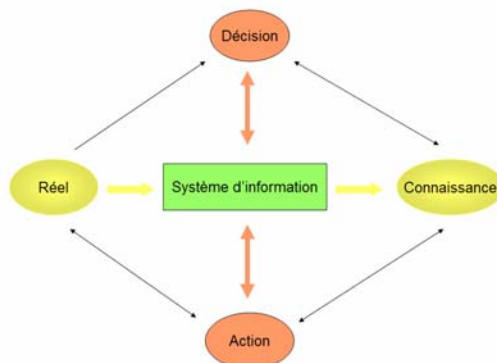
On the one hand, flows of circulating information in the information system are vital. They will enable to decision makers to remain in contact with the ground, i.e. in our context, the territory "reality", materialized by structures and operating modes. On the other hand, actors will also need in order to gauge their interventions, but especially in optics to optimize their operating modes to exploit information flows coming from the observatory. As example, we can quote here the importance of the spaces characterization in term of land price for advising and directing the private individuals within the framework of acquisition projects.

In other term, in the information systems logic, the observatories must allow, within the problems framework for which they were initiated, with all the territory actors acquiring information and knowledge they need to decide and act (Diagramme 8).

⁹ We can remember here to H. Pornon remarks on the "empty shells", expression indicating the observatories emptied of their substance for lack of data! [Pornon, 2007a].

Diagramme 8: The information system concept to the interface between decision and action

Sources: GET/INT/DSI. Copyright, S. Assar

**Conclusion: observation, in the middle of the Territorial Intelligence for better governance**

It appears today that multiple actors intervene on geographical space and that the decision-making help pass through the mutualisation of many data, multi-source, themes multi-sets of, multi-scales. It is indeed essential, in order to improve the comprehension which we have of the territories operation, not to concentrate only on the data trades exploitation, but to cross over these last one's with more synthetic data permitting to throw a total lighting on the approached problems. However, it proves that the data exchanges remain technically difficult, in spite of the efforts made in these fields, regarding standards in particularly [Pornon, 2007a, B, and C]. They require much time, and for lack of time they are forsaken, implying some more superficial analyses, without common referents installation between various actors in load of the regional planning. It comes out from it finally that the governance remains weak, since the various actors visions do not combine; actions are dispersed, little adapted by the whole of the speakers. It thus appears essential to sit the observation tools installation on two steps:

- Trades identification of various actors dividing the tool;
- The data positioning safe made in the middle of the step.

The observation tools installation intends to know with precision the need for various actors using it. It is consequently essential to collect information relating to the latter practices, with their intervention or management territory and with their prerogatives. This is the knowledge, allowing an encircling with more precision future users needs. From this point of view, it is essential to carry out qualitative surveys (by talks) so acquiring a fine trades knowledge and various actors competences, to identify precisely the data mobilized in their professional practice as well as the management methods and these data exploitation; this allows to identify their needs for precisely information (given, indicating...). These talks must highlight the need to meet technicians and decision makers around interests centre to some extent divided by various organizations with through more or less formalized networks. Generally confined in specific approaches related to the exerted trade, the actors seldom have a global vision of the territory operation, and that even if they express the need to wide their knowledge base. The data acquisition should not consist on juxtaposition of redundant

individual steps multitude through which, the space and temporal dimension of problems is not taken into account.

In addition the data question is crucial, the division, the use which will be made by it, often play the part of bolts, which is a matter of simply raising. To mobilize the greatest number and to give a body to the joined knowledge community by the observatory, it is important whereas the carriers of the observatory's project are fully aware of these bolts and mobilize energy and methods necessary to transform these brakes into operational objectives likely to reinforce the appropriation and the tool exploitation by:

- Mutualisation of easily exploitable data, standardized through fast and effective functionalities, thus reinforcing the knowledge base of the territory's actors thanks to the information (given, documents, charts) up till reserved for a closed circle, and divided thanks to indicators, resulting from this;
- The transmissions security and the storage place;
- The statistical confidentiality.

If the partner's adhesion to the proposed device is determining to constitute the utility of the observatory, in fact the data make the observatory heart, and they inevitably constitute the obstacle major point. Then, it is important to show that technology is completely controlled and that the risks incurred by the suppliers are well taken into account.

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