How to Produce a Representation of Fraud in Urban Transportation? Between Knowledge for the System and Knowledge about the System

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Abstract: The topic addressed in this paper is that of the relationship between knowledge and organizations. Referring simultaneously to a research work about fraud by a transportation system, and to a management research tradition, the author accounts for the direct (knowledge production) and indirect (evolution or stability of the management system) results of the research work. The perspective developed stresses the meta-level of knowledge, and highlights the main features of the management system that determine the meta-level of knowledge: tools and place. Finally, the paper opens up to epistemological questions about the role of researchers and proposes as a guideline Hatchuel's epistemological project.

Introduction

For my pre-PhD research work[1], I was expected to produce a representation of fraud on the network of a bus public transportation system of the Parisian suburb. The relation between organizations and knowledge immediately stood at the chore of my interest. On the one hand, I had to make visible something from the environment of the transporter. The relationship between a firm and its environment has been for a long time a major issue of management sciences, but the transporter did not have in mind to think about it. On the other hand, I was, as every researcher, interested in the way the knowledge I had produced would be used.

In the first part of the paper, I will come back on the way I have tried to draw a picture of fraud. Then I will go beyond the first stage of knowledge production, and evoke the way the picture was used by the transporter. To account for this, I will use the concept of fraud management system. I want so to have a global approach of the set of activities related to fraud. I also want to insist on the systemic dimension of organization.[2]

Then I will try to think about the relation between a management system and knowledge.[3] During my research work, I was not involved into the management system, which gave me the opportunity to clearly distinguish the fraud management system from the knowledge I was asked to produce, as I will explain it. I could then observe the way the system reacted to the knowledge I brought.

In a second part of the paper, I will sketch a conceptual frame to analyze the reactions of the fraud management system. This frame will to a large extent appeal (even implicitly) to a tradition of management sciences regarding knowledge and organizations. It mainly comes from the work of the Centre de Recherche en Gestion (CRG) and of the Centre de Gestion Scientifique (CGS).

I will finally try to show how this tradition can be used to account for the relation between knowledge and organizations. The issue can be broadened to be related to larger questions of

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[1] In France, it takes a few steps to become a real researcher. Before the PhD in itself (3 years), it is required to have a year of initiation to research work, which ends with the presentation of a first research work. The paper is about such a research work.

[2] I would not say a management system is exactly the same as an organization. It can be shown yet that each organization has a management system, and that a management system supposes an organization. We will then refer to both as equivalent in the paper.

[3] In the paper, I will define knowledge as a set of propositions that are labelled as "true". This set of propositions is related to a specific topic. Such an acceptation of knowledge is merely a "codified" one. I justify it by the scientific aim of my research. I have obviously encountered "tacit" knowledge, but the knowledge I have produced was codified.

epistemology for management sciences. I will so open up to the question of action and science by evoking the epistemological project for management sciences proposed by Hatchuel.

1/ The research work by the transporter

In the first part of the paper, I will sketch to the reader the main features of my research work by a transportation system in summer 2003. The purpose of the connection was a survey on the characteristics of fraud (fare evasion and fare evaders) on the transportation system of this Parisian suburb.

The survey has been the opportunity to remain by the transporter and to acquire some experience about their action regarding fraud. I stayed six months on the whole for this particular research. I was disciplinary oriented towards management sciences; I had then interest for paying attention to the evolutions of the way to manage fraud.

Finally, my focus was twice. First, as it had been contracted for my research, it was to improve knowledge about evasion and evaders on the network. Then, it was to have a simultaneous look at the way evasion and evaders were managed by the transporter. I will try to account for this twice purpose of the research work by exposing: the way the research happened to be constructed; the direct results of the work; the indirect results of the work (that is the way the direct results reveal the management system).

a/ The expectations and the kind of work

The transporter had in mind to improve its knowledge about fraud on the network. What improvement meant was very vague. Considering the kind of knowledge they wanted me to create, the expectations of the transporter were not very precise. But the point was to make perceptive the relevant information the transporter could not get access to.

An overview was the first step, in order to list and sort out the different kinds of information the transporter had at their disposal. From this overview, I had to underline the main lacks and questions I had noticed. I could then design a research plan to produce further information. Finally, information had to be well fit with the needs of the fraud management system.

But I was not in charge of a critical audit of the management system. To be very clear on that essential point, I can tell a significant anecdote. As we were negotiating the research work, there had been a misunderstanding. I had proposed to make part of the project a critical

management look. The transporter refused it, which almost meant the end of the project. I finally withdrew my proposal and accepted to focus on collecting information about fraud.

I find this story very important because it really showed what the transporter expected (or did not expect) from the research. He wanted to receive a kind of knowledge that enabled a more efficient or relevant functioning of his management system. At that time, I represented it to myself as an "input" knowledge (that is: knowledge to make the system work as it is).

b/ The different methodologies and the reason of their choice

At first, as I have just explained it, I had not thought about a real methodological frame. The status of the research work (a pre-PhD research) as well as the very discovery of what fraud was, were good reasons not to have any idea about the way to make sense with fraud.[4] The choice of the relevant methodology was then related to the results of the precedent used one, on the one hand, and to the evolution of my object, on the other hand.

Statistics

The first source of information was the control data base. The work consisted in computing the data and producing some statistics about numerous aspects of control work as well as the characteristics of reported people. The advantages of a statistical work were triple. First, they were at immediate disposal. Then the data represented a huge amount of information. And finally, they were indeed an already formalized and systematized view of fraud. All these advantages made the data base a precious source of information for me, which enabled me to draw a first solid description of fraud on the network.

The database was designed by the transporter to account for the control and payment activities, about two years before my arrival. As I began my statistical work, the data were hardly used.[5] The database represented however a huge amount of information related to very diverse aspects of fraud: the age of reported people, the elapsed time before the payment of a fine, the kind of identity paper used for reporting, the number of fine for a same people…

My purpose with the database was not very systematic. I had not the skills to produce a model of fraud (in the econometric sense of it). Rather, I have tried to produce much non-systematic

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[4] Such a concept is by the way really questioning. Two years later, the question (of the correct definition of my research object) remains open.

[5] The transporter had no accounting habits, and they used to compute only a few ratings about fraud. Generally, a rate of reported fraud (number of reported people / number of controlled people) and a control rate (number of controlled people / number of estimated passengers) were calculated, after several criteria (which bus line, times, bus station?…).

knowledge about fraud. The aim was to use the database in order to let emerge a representation of fraud. I then more concentrated on average and disparity for the main aspects of fraud as represented in the database.

Control encounters

The statistical work had the great advantage to propose a solid view on fraud. But it was no real answer to the important questions about fraud related to the people not being reported[6], and the qualitative aspects of fraud.[7] For these valuable reasons, the second step of my "inquiry" brought me on the field.

It was a work of direct observation. I followed controllers during around two weeks, trying to understand: the way they worked (which aim for their work? which product is expected? ...), the way they make the contact (what kind of relationship it is about? can we identify some rules of civility? …), and the way they understand evasion (what are the main fare evasion behaviors? why do people commit fraud? …).

The methodology for this work was ethnographic, in the sense that I was immerged in a group with its own culture, practices and understanding of the world. That was however a limited ethnography, if I mean by "limited" the fact that the group's existence was restricted to the control activity. Such an ethnographic perspective has been promoted for a long time in management sciences, in order to shed a light on the real functioning of organizations (Riveline, 1983). I used it in order to underline the real practices and understandings of controllers about fraud, assuming they were an important source of information.[8]

It was also a good opportunity to discover fraud "in the making" and to make observations about the behavior of evaders in public space (so to say an ecological approach of the phenomenon in public space, rather than a quantitative one in an abstract space).

Evaders' interviews

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[6] They precisely represented the major issue for the transporter, from an economic point of view at least. The transporter used to consider that real fraud was in fact three times equivalent to the calculated rate of reported people.

[7] For example, the database cannot account for the violence of a control encounter. The conflict dimension of a control encounter can have for the transporter important consequences (injuries at work for instance).

[8] Ergonomics have already pointed out the difference between prescript and real work. In the case of control, the practices and understandings of controllers were not available on their missions' descriptions. The controller manager could not precisely describe them, and anyway, I considered they were the more relevant people to speak about control (I adopted then a rather ethnomethodological perspective, by turning to the *members*).

The third – and last – step of the research work consisted in going still closer to the evader. The second method had granted an access to the field, but in the controllers' perspective.[9] The purpose of interviews was to discuss with people having committed fraud, and to try to give access to their "living" and own understanding of the reporting and of their fare evasion committing.

We proposed them the following "communication contract". Since they had been reported and had yet up to now not paid for their fine, we could cancel their fine if they accepted to discuss and exchange with me about fraud. The place of discussion was free; the interviews were half-directed: I tried actually to put on them the less pressure I could.[10]

The biases were however significant. I interviewed only a certain kind of people. They had been reported. They had not paid for their fine. They considered somehow the reporting as a matter of importance (since they were interested by the canceling of their fine whereas 70% of reported people do not ever pay for their fine). All these points made the people interviewed non representative. I considered however their point of view was of great importance, because it was an opportunity to counterbalance the other points of views already put on the scene.

c/ The main results (related to the expectations)

I will briefly sketch the main results of the research work, in its successive steps. The point is not to focus on them, but to underline the kind of knowledge that was produced for the transporter, and the way it was used by the transporter.

Statistics

The results of the statistical work were of interest. They witness a great complexity of the object of fraud, but enabled at the same time to make some regularities clearer. The effects of the statistical work were not many. They were mainly used as a "picture" of the network and its fraud, at a certain time.

The transporter especially considered this knowledge improvement as a way to give information to the new comers among the controllers. This attitude could be understood by

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[9] Going along with the controllers and observing their work had made people assimilate me with controllers. For this reason, and because control and reporting are conflict, I had been forced onto a side of the "war", which had therefore excluded me from the other: that of evaders.

[10] I organized the interviews by paying attention to the theoretical work thinking interviews as a negotiation on the world understanding (Grosjean & Thibault, 2001) or as a situation of communication. I paid much attention to the latter by organizing the frame of the interviews with the help of Hyme's SPEAKING (Bachmann, Lindenfeld & alii, 1981). I used it as well for the account of the interviews.

referring to Nonaka's work about the creation of knowledge (Nonaka, 1994). Knowledge is viewed as more or less formalized (tacit / codified) and socialized (individual / collective), and the point is then for managers to ensure the evolution towards a codified and collective knowledge.

I do not criticize Nonaka's model of knowledge, but I think such an approach can be relevant when the codification of knowledge enables a better socialization of it. In the case of the transporter, the knowledge was mainly tacit, but it was shared. A codification of an already shared knowledge appeared not to be very relevant.[11]

It appears then that the main effective results of statistics were to picture punctually the fraud on the network. Several aspects were of interest, some questions were raised (about the relevant categories or schemes to analyze fraud especially). But the statistical work was never viewed by the transporter as an eventual systematical tool to promote. It was a punctual way to better fit the fraud management system with its environment.

Control encounters

By observing control encounters I tried to draw some usual scenarios of control and reporting. They enabled me to propose a flexible model of reporting as a sequenced interaction and made clear the key features of it. Moreover, I underlined some dimensions of control and reporting, such as violence and conflict especially.

Once more, it appeared that such a kind of knowledge was of interest for the management, and not that much for controllers, who had a tacit understanding of what I explained. The use of this knowledge was actually very restricted, all the more so as the dimension of conflict and violence were denied.

Evaders' interviews

The interviews were very productive, because they brought much new information. They made connections with the point of view of evaders, which enabled to address topics such as the motivation or the feelings (fear, anger, shame…) of evaders. These topics were not accessible by the controllers' or the database entrances.

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[11] Even for the new comers, it can be questioned, since they are well socialized by the work group… Maybe it can be understood by interpreting the codification of knowledge as an empowering of the managers, who else have no means to influence and control the work group.

The interviews were a means of completing the picture of fraud. This brings us back to the case of statistics. It proves to be a punctual improvement of knowledge. Their utility and eventual uses are yet not really obvious.

The difference with the other results (statistics and control encounters) lies in the consequences of this improvement of knowledge. As I will try to show it in the next paragraphs, whereas statistics and control encounters analysis had had no consequences for the fraud management system, the insertion of the evader's point of view impacted the functioning of the system.

d/ The "boomerang" effects (related to the main results)

Which step has made the management system evolve?

I would like to stress some indirect effects of the knowledge production I have just described. As for the statistics work and for the control encounters observation, it is difficult to find one. Obviously, people found interest in my statistics, and one or two of them even asked me to keep on producing some key numbers for them. As well, controllers reacted to the violent understanding of control, for instance, or discussed some of the scenarios' technical aspects. But these micro effects were followed by no concrete evolution of the fraud management system.

On the contrary, the interviews had a concrete consequence. They made the transporter more aware of the importance of the evader; that is of the relational aspects of fraud management. I was then proposed to keep on my research work with experimentation on a specific way to deal with fine payment. The point was precisely to take the relational dimension of fraud management into account, and to propose then another kind of relation to the evader that had been reported: contact them, try to have a personal attention for their case, think about a solution to a recurrent problem of fraud…[12]

Behind each specific step, the continuity of a reflection

There is one point I would like to come back on. I insisted much on the interviews' impact. I think this has to be counterbalanced. The interviews actually were determinant in the

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[12] This was the project of experimentation. The reader has already guessed this was not all so easy, and the intent had to face many obstacles. Currently, there has been as far as I know no institutionalization of the project. Experimentation has not proved to be very efficient in regard of the means the transporter could accept to involve. But I really insist on the fact it was decided to experiment. This can be considered as a concrete effect of the knowledge production.

knowledge they provided to the transporter. But as I have noticed before, they are the third step of my progressive approach of the object of fraud. I mean that a relational understanding of fraud could already be guessed in the questions raised by the statistical work or the control encounter observations.

It is somehow artificial to separate the steps of a continuous reflection. I could have mentioned especially that the encounters observation had been a premise for a relational understanding of fraud. I had actually used Goffman's model of the service relation to analyze the interactions between evaders and controllers. Goffman notices that in some cases, the service relation can be based on a misunderstanding.[13] Such a view was of great help to become aware of the necessity to integrate the evader's point of view.

To conclude, the separation I have artificially operated has however its utility. It was supposed to show the homogeneity and the contribution to the improvement of knowledge of each research step. From this point of view, and even if it has its origin in the other approaches of fraud, the last step has undoubtedly had more concrete effects on the fraud management system. I would like to address this difference in the second part of the paper.

2/ System of knowledge and meta-knowledge

In this second part of the paper, I will try to account for the different impact of the knowledge improvements. I will first try to introduce the reasons to explain the variable impact of a knowledge improvement. I will especially show the notion of improvement is not sufficient to account for the effect of knowledge. Then, I will try to sketch two main aspects of what constitutes a system of knowledge (the tools and the places of a system of knowledge), and suggest how such a concept can account for the effects of my research by the transporter.

a/ The interactional approach of deviance and the necessity of a meta-level for knowledge.

An interactional frame to criticize the results of the research work

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[13] Goffman thinks about the relation between the mental patient and the psychiatrist, in the context of a mental institution.

The interactional understanding of deviance considers deviance as well as a result of a deviant act, as that of the institutional activity.[14] Kitsuse and Cicourel for instance (Cicourel and Kitsuse, 1963) wrote a note about the production of police statistics, where they show how far the figures supposed to reflect the deviant activity should be above all used as indicators of the police activity… I had noticed such a danger in my statistical work.[15] The point is not then to question the validity or the truth value of any figures. I already addressed this issue.[16]

In fact, I rather need to understand why the improvement of knowledge had no effect on the fraud management system.[17] It is interesting however to use the interactional deviance perspective to stress the role of the transporter in the production of the figures. They are not the only pure reflect of evasion; they are too that of the transporter's activity.[18]

Then the use of the database is actually not neutral. It does mean, on the contrary, that I based my own look at the phenomenon on the hypothesis and categories that were used to design the information tool.[19] There is a danger of circularity of the produced knowledge on fraud.

The same kind of conclusion can be drawn from the observation of control encounters. I have mentioned Goffman's frame for service relation. He pointed out the fact the psychiatrist and the patient were trapped in an institutional definition of each other, that constrained the former to understand the latter as a patient, and to interpret every behavior from him as a sign of mental illness (Goffman, 1968).

Fraud can introduce the same kind of trap, in the sense that a controller interprets every behavior and word of an evader as a strategy related to the fine. In this case again, the hypothesis (and the knowledge that goes with these hypothesis) belongs to the situation of

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[14] Given they opposed causal theory of deviance that all assumed the institutions only noticed the deviant behaviours, the interactional authors generally more focus on the active role of institution in the constitution of deviance. Their theory however is supposed to take both sides into account.

[15] For instance, the fraud rate could be sometimes hundred times as high from one bus station to another (200 meters distance). That seemed to be explained by the positioning of controllers (for whom the choice of a bus station is decisive for control and reporting). In that sense, the controllers' work had a major influence on the figures of fraud. The latter did not account anymore for fraud as a result of people's deviant behaviour.

[16] The question was of importance for my research report (Suquet, 2003). I referred to Desrosières approach of statistical artefacts. He goes beyond the opposition between convention and reality. He endorses the "objectivation" capacity of statistical artefacts regarding the world.

[17] One way to answer could be to consider there was no new information in the results. It would be yet surprising, since nobody had tried to produce information from the database.

[18] This is all the more obvious in the present case since the database's input are the controllers' fines and activity reports.

[19] Hatchuel and Weil (Hatchuel and Weil, 1992) had interested in expert systems (supposed in the seventies to be the universally rational solution). Their critique dealt in particular with the "forgetting" of the knowledge dimension on which these systems were based. Most of the time, a form of knowledge was given a greater place, and another was forgotten. In my opinion, their work clearly shows the impossible neutrality of a formalized system of knowledge, even if this impossible neutrality is quickly forgotten…

control (that is in great part to the institutional proceedings). The same issue of circularity appears for the second step of my research.

It is easy then to understand why such knowledge had no real effect. It could not, because it was produced *from the basic hypothesis* of the fraud management system. Far from a knowledge improvement, there has been to a large extent knowledge mimesis or repetition. Obviously, it cannot be denied there has been at least an update, or a quantitative increase in knowledge. That can have an effective utility for the management system.[20] But it can have little impact on the fraud management system.[21]

A meta-level of knowledge

We have seen there is a criteria to distinguish knowledge performativity on a given management system. The criteria lies in the position of the knowledge relatively to the basic hypotheses of the system analyzed.[22] The reflection of Paul Watzlawick goes in this direction. He tries to build a systematic understanding of what enables a change (Watzlawick, 1975). He starts from mathematical theories (the theory of groups and the theory of logical types), and tries to apply what they can teach us to the daily situations. As for me, I will try to apply it in my turn to another kind of object: a management system. That means I shift from relationships to organizations.

The following quotation shows how Watzlawick's theory of change can fit with the research description I have done. It can precisely suggest a systematic understanding for the kind of distinction I had made regarding the specific research work by the transportation system:

> *"Group theory provides us with a model to think the kind of change occurring inside a system that remains unchanging in itself. The theory of logical types do not focus on what happens inside a class, that is between its members, but provides us with to examine the relationship between a member and its class, as well as the particular transformation that constitutes the passage from a logical level to the superior one. If we accept to make that basic distinction between these two theories, we can deduce from it the existence from two kinds of change: the first one takes place inside a given system which remains unchanged; the other modifies the system itself."[23]*

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[20] If the transporter has asked for a survey on evasion and evaders on the network, if there is no evidence of uselessness, I must consider it has its own utility for them.

[21] I deal with impacts that cannot be mistaken with current functioning (functioning as it is).

[22] I do not advance such a criteria as necessary. Paul Duguid for instance (Duguid, 2004) could probably convincingly explain the stability of the management system by the lack of consideration for the "critical" tacit knowledge.

[23] See Watzlawick (1975), p.28. Please notice that I use the French edition. I translated again, from French into English. But I do not guarantee the strict equivalence with the original text from Watzlawick.

Watzlawick uses the notion of system that organizes coherence between elements (belonging to the same group) and sees two possibilities for a given system: change or permanence. He does not indicate the concrete lever to switch from a given logical level to the superior one. I will try to precise it later.

So it seems possible to use his formalization of the change, and apply it to the results of the research by the transportation system. The fraud management system had evolved in different ways (permanence or change) following the kind of knowledge produced. The first kind of knowledge was constituted by elements of the existing basic knowledge of the management system, which it already used for its functioning. The second kind brought exterior elements, which enabled a change of the system because it constrained a passage to the superior logical type.

The formalization of Watzlawick is all the more interesting as it seems to shed a certain light on reflections in management sciences about the relation of an organization to its environment. It could be a good way to distinguish two means for a management system to react to knowledge about its environment. As interesting as it may be, it is yet not sufficient. It gives no clue about the concrete features of a management system that account for its permanence or change. I will now try to sketch the main ones.

b/ Tools of knowing, places for knowing

It is a matter of importance, at this point of the paper, to try to isolate the main elements of the management system that give to see more precisely: what a management system is constituted with; and what the elements are which play a role in its evolution (permanence or change). I will try to stress the tools first, and then what I will call the "places" of a system.

I can not ensure there are absolutely no other elements in a management system. However I think this is a first strong definition of a management system. Tools and places in a given organization can respectively refer to technological and social sub-system, which are the main features of Emery and Trist work on organizations (Charreire & Huault, 2002).[24]

Tools of knowing

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[24] Their work on organizations at the Tavistock Institute is well known. He brought new insights into the theory of organizations. Furthermore, except for theories focusing on psychoanalyst understanding of organizations, technological (instruments, proceedings…) and social aspects (actors, communities…) in their broad sense can however be connected to a great many theories. The reader can refer to Bernoux's sociology of organizations (Bernoux, 1985).

I would like to have here a broad definition of a tool in organization. Moisdon calls "management tools" the management techniques that show formalization of organized activity (Moisdon, 1997).[25] My definition of tools will also involve the objects to perform organized activity. A good example of it can be found in the work of Denis Bayart, who studies the constitution of a statistical tool (Bayart, 1995).[26]

Tools can obviously be a way to produce knowledge. But it can be interesting too to look how far tools are produced by knowledge. Bayart convincingly shows the control cards are a materialization of knowledge that gets embedded into an object for use. As well, Moisdon recalls the traditional understanding of management tools as tools for conformation. It seems easy then to point out the knowledge which the conformation results from.[27] Tools then produce knowledge from knowledge (inside the same group)

The point can be stressed by referring to the distinction between meta-knowledge and knowledge. Tools alone often only produce knowledge, and do not give access to the meta-knowledge they were made of. Desrosières has shown how statistical tools are less and less questioned, although they were a pure theory at first. He explains it by an institutional work that inscribes this theory into reality by the means of "solid" objects (Desrosières, 2000).

My purpose is here to suggest a view to the reader, which can explain the permanence of the management system. The example of statistical objects is from this point of view efficient, since it makes the connection to the permanence of the fraud management system (the statistical part of it) I have described.

To conclude with tools, I must however evoke their possible role in the evolution of a management system. Moisdon sees actually them as means to learn about reality. This is in favor of a possible meta-knowledge production by tools. I do agree with such a view, but it is important to notice Moisdon deals with the introduction of new tools: this was hardly the case

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[25] Moisdon means formalization of what organized activity is, will or should be. The complete definition says: *"We will use this denomination every time we will encounter a set of arguments and knowledge that formally connect a number of organizational variables, be it quantities, prices, quality levels, or any other parameters, and that are aimed at conducting the investigation for classical management acts which can be classically put together: to forecast, to decide, to control."*

[26] Bayart means with objects "material, concrete or graphical forms". The statistical tool he studies is a graphic representation (control cards) designed from a statistical rule, and used to control the production quality. See Bayart, 1995.

[27] Foucault has followed such a direction in his research work. A good example of it is his first study of the history of sexuality (Foucault, 1994).

for the transportation system. Moreover, Moisdon himself has recently underlined the difficulty to learn with tools (Moisdon, 1995).[28]

Places for knowing

The concept of "place" refers to the work of the ethnographer Jeanne Favret-Saada. She has actually worked on witchcraft by the French country about thirty years ago (Favret-Saada, 1977). Her purpose was to create scientific knowledge about the controversial phenomenon. She however faced difficult methodological issues. As a scientific (and a stranger), she witnessed the impossibility to talk about her theme of research. People pretended not to know anything about it, or even not to be involved in it: other people believe in it…

She understood witchcraft was a system of relationships and of discourses, in which a certain number of positions existed. The concept of place tries to account for the position in such a system. She realized the witchcraft system had a strong permanence and closure. There was no place for a scientific researcher (as well as for journalists…). She finally succeeded in getting access to knowledge about witchcraft, but only by experiencing the already existing places of the system… thanks to lucky circumstances and to her long term presence.

Again, I do not want to try to show that an evolution of a system of places is not possible. It would be as vain as for tools. But the concept of a system of places can partly explain the rigidity of a management system. For instance, the research by the transporter can be better understood with the concept of place.

So to say, the third step of the research consisted in suggesting a new place in the fraud management system. As I have tried to stress it, there was no place for the evaders in the system. The integration of a new place was a means to make the system evolve. Integrating a place for evaders supposed to accept their discourse and the associated knowledge. It also necessitated to think more about the connections between payment department and evaders for instance. This is probably one of the reasons for which experimentation was decided, whereas the steps one and two of the research had no "meta" effect.

This second part of the paper has helped to better show what happened with the created knowledge, by the transporter. It is important to make a clear distinction between two levels of knowledge. Meta-knowledge and knowledge do not have the same impact on a

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[28] A systemic approach of organizations can account for the rigidity of a management system, since tools are numerous, and they never change all together. The innovation of one tool has then to be put in relation to the permanence of the other tools.

management system. Tools and places constitute a management system. They produce knowledge and can account for knowledge regulation. They actually appear to be mediums of permanence and of change. I have mainly insisted on the permanence effects, in order to draw a parallel with the research work described in the first part.

Conclusion

I have outlined a frame to account for the differences of knowledge performativity on the fraud management system. The frame insists on the importance of taking into account the knowledge already embedded in the management system. It can be found through a critical look at tools as well as at places. The next step seems to insist on the critical role of the researcher.

Critics and management sciences

The point is not ideology. Whereas critics can easily be assimilated to ideological discourse, the critical look I suggest here mustn't be understood in the same way. It rather deals with stressing eventual roundabouts and supporting a reflexive attitude. Many authors insist on the importance of the critical look at organizations. [29]

But I am not interested here in only critical streams of research. [30] To draw on the parallel with the research work done by the transporter, I want to insist on the constructive aspects of a research in management sciences. Authors like Lorino (Lorino, 2005) or David (David, 2002) for instance, have insisted on the importance for researchers to care of the meta-level in a constructive orientation. The former has used it in a pragmatist way to help a firm organizing one its process; the latter appeals Peirce's notion of abduction to create new ways of thinking. It seems they indicate a good way to connect knowledge and research for organizations.

Towards an epistemology of management sciences? The epistemology of action

Some authors in management sciences have looked forward to develop a systematic view on this ambiguity of management sciences. Acknowledging management sciences have a

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[29] I do not think to over-interpret Sabina Stan's as well as Jonathan Larsson's contributions by saying they endorse too a critical perspective, at a different scale. Transparency is not only a matter of quantity of information (e.g. "improvement of knowledge"), but should be analyzed as a way to organize (socially, cognitively) knowledge.

[30] I can take the example of the « critical studies » stream of research, which bases its reflection on authors like Foucault, Derrida, and so on.

problematic epistemology – and in fact a need for a unified epistemology (Cohen, 1997), Hatchuel thinks about an epistemological project for management sciences (Hatchuel, 2002).

His project carries on the management sciences tradition I stressed in the introduction. This tradition insists on the role of artifacts and knowledge in organizations (Charue-Duboc, 1995; Moisdon, 1997). It has also thought about the relationship between an organization and a researcher (Girin, 1990), so introducing the relational dimension of knowledge dynamics.

Hatchuel as for him proposes to analyze organizations by focusing simultaneously on relationships and sets of knowledge.[31] The simultaneity of the look enables a researcher to reveal the way an organization works. For an organization has a purpose of action, Hatchuel says each one is based on what he calls a "metaphysics of action".[32]

His epistemological project then clearly stands for a critical production of knowledge of the researcher. The purpose is to play a role in the knowledge dynamics of organizations, in order to help them to evolve. Isolating a metaphysic of action enables an organization not to remain embedded in its own knowledge. Management sciences, which are traditionally viewed as discourses for knowledge, then become discourses for collective action. Remains that, if the criterion is the impulse for collective action, my research work was not really successful…

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[31] It is not strictly equivalent to my approach through tools and places. It seems however that corresponding is possible. I have actually insisted on the fact tools and places were organized in a system, which leads to the relations. Furthermore, I have shown how every tool or place was related to a set of knowledge. Without leaving behind the tools and places' approach, it appears to be possible to endorse Hatchuel epistemological project.

[32] It is interesting to notice the metaphysics consists in "meta" knowledge on physics…

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