Constrain and Empower: The Dual Dimension of Control Tools

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Abstract

The purpose of the paper is to show that management tools have a dual dimension: they simultaneously constrain and empower people. To demonstrate this paradox, this article refers to studies from the research stream founded by Michel Foucault that highlight the mechanisms that enable control tools to constrain people. The link between knowledge and power plays a major part in this dynamic. This article links such research to that of Armand Hatchuel. Hatchuel extended the idea of the relationship between knowledge and power by showing that knowledge has two faces: it constrains, but through its reflexive dimension it also empowers employees. Knowledge enables individuals to develop new behaviors that they themselves define. On this conceptual basis, our article underlines that control tools contain both the dimensions of constraint and of empowerment. We compare two case studies that demonstrate this dual dimension. The data was collected longitudinally using observations, semi-directive interviews and documentary data. The first case study shows that a tool for competence evaluation, initially designed with a view to empowerment, also contains a dynamic of constraint. The use of this empowering tool produces new knowledge that transforms it such that it becomes more constraining. Conversely, the second case study shows how a satisfaction survey, originally directed towards constraint, produces new knowledge that empowers employees, enabling them to adopt new behaviors. This article shows that the dimensions of constraint and empowerment are present simultaneously in control mechanisms. These two dimensions should not be opposed; they co-exist. Analyzing the complexities of how they are related should enable managers as well as researchers to better understand the processes of setting up and transforming such control mechanisms.

Keywords: Constrain - Empower – Control – Foucault – Hatchuel

Introduction

This study examines two cases where control tools were deployed and where the initial intention to control was transformed through the way the tools were actually used inside the organizations in question. These case studies deal respectively with a tool for rewarding competences in a petrochemical company, and a tool for quality control in a public service department. Both cases deal with assessing human resources and quality inside two distinct organizations studied over time. This research aims to understand why the initial prescriptions were adjusted over the time that the tools were deployed.

This study explores and compares these cases from the viewpoint of the empowering and

means to influence and guide the behaviors of organizational actors. However, control tools also appear as able to generate new information that makes it easier to pilot organizations. These uses appear notably in research that shows up the multiple functions of the management controller (Bollecker, 2007; Fornerino & Godener, 2006).

Simons (1995), also mentions this perspective of the uses of E-C; he thinks that control levers belong to a field of contradictory tensions: focusing attention and seizing opportunities on one hand, and deliberate strategy and emerging strategy on the other. Diagnostic control systems coordinate the implementation of deliberate strategies by focusing attention on strategic uncertainties and new opportunities. Conversely, interactive control systems emphasize strategic uncertainties liable to provoke the emergence of new strategies. For Simons (1995), accountants' language fulfills two functions: coercive language via diagnostic control systems and emancipating language via interactive control systems that enable learning (Dambrin, Loning, 2008). According to this idea, control levers exist independently of the usage that managers make of them. Simons however, did not study the ways in which managers themselves learn (Dambrin, Loning, p.134).

In this article we analyze the E-C use of control tools using the works of Michel Foucault with the added insight of Armand Hatchuel's analysis. We focus on the way that managers use these tools rather than on the nature of the tools themselves. The works of Michel Foucault have in fact been particularly important in improving the conceptualization of the concrete mechanisms through which control is rendered effective. In particular, these mechanisms underline the central role of the relationship between knowledge and power. These analyses were extended by studies focusing on defining the nature of this power (Haggerty et Ericson, 2000; Rouleau, 2007; Townley, 1993). Nevertheless, this literature mainly examines the constraining dimensions of power. Even if these authors show that individuals resist such disciplinary measures (Hoskin & Macve, 1986), they do not analyze in detail the new knowledge and self-defined behaviors that these individuals develop. Although the constraining dimension has been thoroughly investigated, that of empowerment and how these two dimensions are related, have received much less attention.

Using the above mentioned works as a basis, this article relates them to Armand Hatchuel's concepts that explore the question of empowerment in far more depth. In fact, while taking up Michel Foucault's idea that the relationship between knowledge and power is fundamental to understanding control mechanisms, Armand Hatchuel underlines that knowledge always has a dual dimension: one of constraint, but also one of empowerment.

Knowledge enables actors to adopt a position that results in their ability to transform the control tool itself, rather than only being subject to it or resisting it.

In this article, we aim to focus on this dual dimension of knowledge - constraint and empowerment - and examine what this can teach us about the use of control tools. *In fine*, our objective is to show that the E-C dimensions should not be opposed to each other, but rather that they are indivisible and interdependent. Indeed, they feed off each other, constraint appearing as the springboard to empowerment and empowerment producing constraint.

After a discussion of the concept of the research stream initiated by Michel Foucault and an introduction to the works of Armand Hatchuel, we propose two case studies that illustrate two different developments of control tool use. In the first case, the tool for rewarding competence was originally designed with a view to empowerment. It was gradually used in a far more constraining way. The second case relates the use of a quality control measure in a local public service department. We observe that this tool was firstly designed and used as a constraint on actors; however, these actors then transformed it into something far more empowering. The results from these two cases lead to our concluding discussion about how the E-C dimensions are related.

1. Literature on E-C usage of control tools

The literature for our research focuses on analyzing E-C usage of control tools. The research stream initiated by Michel Foucault played an important part in contributing to better understanding the concrete processes through which these tools become constraining. This research shows that the use of these tools can differ from the designers' original intention. Users improvise and resist the deployment of control tools. However, this research stream did not make a detailed analysis of the fact that these tools also empower actors. We thus add to this research, using the work of Armand Hatchuel to show that the tools empower actors who, through reflection, transform the control tools themselves.

11. Use of control tools in the research stream initiated by Michel Foucault

The works of Michel Foucault have found particular resonance in the fields of accountancy, budget control and audit because they highlight the techniques of exercising power and the forms of subjectivisation imposed on individuals in many spheres of society (Gendron & Baker, 2005; Pez, 2004). These studies thus constitute a stimulating basis for research seeking to analyze the constraining usages of control tools (Coopey & McKinlay, 2010; Townley,

1993). They underline that power is exercised above all through the proliferation of micro measures that discipline individuals' actions.

Michel Foucault's analysis relies on a profound study of the relationship between knowledge and power (Foucault, 1975, 1976, 1984). Foucault underlines that knowledge and power cannot be thought of separately. Any element of knowledge produces an effect of power when that knowledge can be considered as true (or probable) or false (or uncertain). Knowledge appears as one of the principle bases of power. Symmetrically, it is power that directs the production of new knowledge. In particular, the exercise of power makes it possible to gather knowledge about individuals from discreet elements of knowledge. In fact, if it is impossible to exercise power without knowledge, it is also impossible for knowledge not to generate power.

This seminal research has been broadly extended into management science. The relationship between knowledge and power is particularly interesting because it helps to understand what is at play in the deployment of control tools. Indeed, Hopper and Macintosh (1993) base their work on the deployment of control tools when they describe Harold Geneen's implementation of a disciplinary organization as Director of the *International Telephone and Telegraph* in the 1960s and 1970s. This organization revolved around three pillars of constraint, namely the art of enclosure, partitioning and ranking. This logic is also represented in the work of Ogden (1997) and Vaivio (1999) who show the dynamic of control being extended to non-financial matters (processing client complaint indicators and measuring client relations).

Research in human resource management has indicated certain sources for the interiorisation of behavioral norms. This implies that the strength of control tools resides in actors' visibility, as well as in the relationships that unite them. Foucault's image of the Panopticon is taken up by Townley (2004), who draws an analogy between the panopticon and management systems. Through such systems' categorization of actors and their interactions, management makes actors visible, transforming them into discreet entities that can be calculated and ultimately, "*managed*".

The metaphor of the panopticon has been criticized particularly because it relies on the hypothesis that an enclosed space exists (Brivot & Gendron, 2011; Le Texier, 2011). The metaphor does not suggest that the exercise of this power is in fact *rhizomatic* (Haggerty & Ericson, 2000) or "*capillaried"* (Roulleau, 2007). The reference to the panopticon and more generally to what is known as Foucault's genealogical period has dominated management

research. The result has been a sometimes excessive overestimation of the constraining nature of control tools.

As we shall now see, research following Foucault's stream also underlines that actors resist this disciplinary control because they are capable of improvisation and reflexivity. Nevertheless, we shall also see that resistance is not the first thing they think of and finally, reflexivity is considered as a mechanism through which individuals themselves contribute to reinforcing the significance of imposed behavioral norms.

Foucault, himself underlines that discipline produces resistance in those who are subject to it. In *Histoire de la sexualité. La volonté de savoir* (Foucault, 1976), he writes: "*where there is power, there is resistance"* (p.125). Foucault sees perfectly well that the exercise of power is fallible: it contains loopholes, is never totally foreseeable and is thus likely to be diverted. Between the projected intentions of tools and their effective usage in practice lie the thick layers of the organization: viewpoints concerning territory, individual and group strategies as well as the wealth and diversity of potentially divergent interpretations that may exist towards the same tool.

Inspired by critical feminist theories, Townley (1994) also suggests that we should not ignore actors' subjective experience that enables them to develop improvisations in everyday practice to make sense of their situation. Even though her critical perspective leads her to put more emphasis on the constraining dimension of tools, Townley (1994) refuses to reduce them to this lens only, underlining that: "*Disciplinary power is simultaneously productive and repressive"* (1994, p. 141). In her research, she thus evokes the existence of a "*deviant"* strategy (2004, p.426).

Other research that focuses on company case studies (whereas Foucault preferred a historical approach) highlights this same phenomenon of improvisation. Hoskin & Macve (1988) for example, writing about accounting methods in three companies *(Springfield Armory ; Western Railroads and Pennsylvanian railroads)*, declare that *"people may "play the system" and seek to evade the disciplinary surveillance"* (p.66). Miller & Rose (1990) underline that technologies create unforeseen problems and never completely determine individual behaviors.

Finally, Brivot & Gendron (2011) propose a longitudinal case study that helps to understand how a knowledge management tool (KMS) can be diverted by tax lawyers. The essential element of this article focuses on this disciplinary dimension but the authors also show that actors can sometimes use these measures to their advantage, making visible hitherto invisible know-how that highlights their value: "*The KMS is also characterized with*

enabling capacities in the sense that most lawyers come to enjoy the web of visibility it engenders" (p.149).

In an article devoted to Michel Foucault's work in accountancy, the «*productive*" element is mentioned by McKinlay & al. (2010): "*Power, Foucault suggested, was not merely repressive but productive of institutions, behaviors and identities. Knowledge, moreover, was enmeshed in power relations: power required an administrative imagination and the development of detailed, cumulative and comparative ways of measuring power in action*" (p.1018).

Nevertheless, in this research, the presence of resistance and improvisation does not threaten the existence of disciplinary power; paradoxically, it constitutes the condition for such power and indeed reinforces it.

Even if they contributed to redefining the forms of power, these studies remained faithful to the definition of power as Foucault understood it. Pezet (2004) thus underlines that in Foucault: "*knowledge is not made for understanding, but for making decisions"* (Pezet, 2004, p.173). Even though, like Townley (1994), these studies recognize an empowering dimension of knowledge, they do not really propose concepts for analyzing this. It seems to us that the use of a control tool, its adoption into actors' everyday practice and the way it is used in the organization, create knowledge that is most of the time unknown by the tool's designers. The concept of "prescriptive relationship" developed by Hatchuel seems to us to shed light on the productive dimension of managerial techniques and its relationship with their disciplinary character. This is the subject of the following section.

12. Extending the reflection through the work of Armand Hatchuel

The combination of Hatchuel's conceptual framework (1996, 1999, 2003) with the above mentioned research seems to us to contribute to the research stream initiated by Michel Foucault and to open up the way to reflecting on the empowering uses of control; this does not mean losing sight of the analyses contributed by the above research on the constraining dimension of such tools.

Hatchuel (2003) underlines the importance of what he calls the "*principle of inseparability*". This principle stipulates that "*knowledge*" and "*relationships*" can never be thought of separately. A management tool is merely a vector for producing knowledge about organizational reality and informing various management activities (anticipating, deciding, evaluating, controlling); management tools structure and transform relationships among

actors. An internal opinion survey is thus not only a way of finding out more about the state of the social climate within an organization: using such a survey can also modify the relationship between employees and management. This "*principle of inseparability"* (or *S/R principle*) follows the same logic as the relationship between knowledge and power described as fundamental in the works of Foucault. It is particularly visible in the article that Hatchuel (1999) devoted to the works of Foucault.

However, whereas Foucault focuses essentially on the fact that knowledge is not made for understanding but for constraining others, Hatchuel focuses on the question of "*reflexivity*" and, hence, empowerment (Hatchuel, 2003, p.31). He underlines that an individual's acquisition of knowledge leads to transforming his relationship with the other, but it also results in a transformation of his relationship to himself: knowledge acquisition is a learning experience likely to influence an individual's own identity as well as his understanding of others and his environment (Rabardel, 2005).

As mentioned above, reflexivity and resistance are contained within Foucault's analysis (Kosmala et McKernan, 2011; Ragaigne, 2011). However, in the light of Hatchuel's work (1996; 1999; 2003), we can see that for Foucault, these aspects are considered through the dynamic that reinforces surveillance and discipline. Without in any way questioning this dimension, Hatchuel's work highlights that reflexivity can also be oriented towards creativity and imagination thus contributing to circumventing these same behavioral norms, even going as far as questioning the measures of control and proposing alternatives to current ways of directing behavior.

From our point of view, the works of Hatchuel thus complete those of the stream initiated by Foucault. They underline that learning enables employees to acquire resources allowing them to circumvent, discuss and question the power exercising technique imposed on them. Describing such actors, Hatchuel underlines the complex, often unforeseen and innovative roles that individuals can play within organizations.

This leads Hatchuel to further extend the research stream initiated by Foucault, by proposing the notion of "*prescriptive relationship"* (Hatchuel, 1996, p.107). The prescriptive relationship is not equal, because one of the actors is a prescriber whereas the other undergoes the prescription; however, the relationship is not totally arbitrary. In fact, however constraining the prescriptive relationship may be, its implementation systematically leads to a crisis. By applying the prescription, the user subjected to it also acquires specific knowledge about it. Indeed, these actors learn to identify the situations where this prescription is effective and those where it is not; moreover, they know more about this than those who designed the

prescription. These actors can even identify the points where it will be necessary to modify the prescription so that it works better. In order to be effective, the prescription is thus supposed to be completed and amended by the user; the user being the one who understands it with its failings, inconsistencies and unmentioned aspects. The notion of prescriptive relationship seems to extend Foucault's research stream by offering a complementary vision of knowledge: it constrains, but it also empowers.

Hatchuel (1996) shows that there are two ways of escaping from the prescriptive relationship crisis. The first is through a disconnection between the prescription and the actual activity of the individual subjected to it. This occurs when the designer refuses to recognize the legitimacy of the knowledge that the user has acquired about the prescription and thus refuses to transform it by making use of that knowledge. By reaffirming the superiority of his knowledge as "designer", he thus maintains the initial prescription; however the prescription becomes inoperable because it is not respected by those who are supposedly subjected to it. The second solution is that designers recognize the validity of the user's knowledge; they then produce a second version of the prescription integrating the transformations suggested by the user.

The concept of "*prescriptive relationship*", the crisis it embodies and the solutions for its resolution appear as a particularly interesting and enriching interpretation of the research stream initiated by Foucault.

2. Introduction to the two control tools studied

We shall now present the empirical data illustrating how Hatchuel's work helps to enrich the reflections of Michel Foucault; this shows that control tools have a dual dimension of constraint and empowerment.

21. Data

The subjects of our research are complex social phenomena that must be set within their organizational context. This is the first characteristic in favor of using a case study (Ragin & Becker, 1992). We aim to access actors' interpretations by basing our enquiry on many different information sources. Using this interpretative methodology, we collect actors' perceptions of the deployment of control tools.

In order to see phenomena we are analyzing more clearly, we have chosen to present and compare two case studies. In each of these, the deployment of control tools results in two

apparently opposite evolutions of the E-C dimensions. Indeed, these cases show a change in the inherent relations of empowerment and constraint from the original prescriptions to the way the tool were actually used.

This study shows the empowering dimension to be characterized by a learning experience: actors adopt a position that contributes to redefining the way the tool itself works. The constraining dimension is characterized by directing and influencing actors' behaviors.

The data in these two case studies (hereafter referred to as E1 and E2) were collected on the basis of documentary studies and semi-directive interviews (table 1).

	E1	**E2**
Documents	General documents presenting the company; social statement; declaration 2483 entitled *"participation to the development of professional training (participation au developpement de la formation professionnelle continue)"*; principle texts and company agreements relevant to internal employment management; internal communication supports etc.	Evaluation reports ; strategic plan for 2015 ; guide for administrative evaluation and reporting ; report of activity of the solidarity department, press dossier, communication fascicule ; meeting minutes, notes from different committee (as Comité Technique Paritaire)
Semi directive interviews	19 semi-structured interviews Persons interviewed: factory director as designer of the process, change manager (from HR department responsible for designing and implementing the tool), HR manager when tool was designed, Curren HR manager of company, head of maintenance department (N+2), Maintenance team leaders (N+1) (3), maintenance technicians (9), trade union delegates (2).	12 semi- structured interviews Persons interviewed: Head of the "user relations" mission, two heads of the UTS (solidarity unit) Unité Territoriale de la Solidarité, head of the AEP (Parental education unit) (Accompagnement Educatif à la Parentalité) involved in the quality process and the head of the *Evaluation and management Council (*Conseil de gestion et Evaluation), a peronnel representative, two reception agents and the Director of Solidarity.

Table 1. Data collected

The documentary study gathered the main formal information about these organizations (history, main key figures etc.). A summary of these figures can be found in Appendix 1. Semi-structured interviews were then carried out. These are essential for analyzing the phenomena in context and according to the actors' arguments (Burgess, 1982; Stake, 1994). The methodology consisted of series of semi-structured interviews with designers and users of the tools. In the text below, we provide extracts from interviews with the initials and functions of the interviewee after each quotation.

Data triangulation highlights the logic underlying the construction and use of the tools and identifies their main characteristics and structures. The data were collected using specific interview grids. The study collected data about how the deployment of control tools evolved; we examined the choices made, modes of design and actual use of the tools. The choice phase

aims to understand the elements on which control is based and the reasons for its implementation. This phase focuses on the intentional elements of control, in other words, what was intended when the tool was set up. As for the prescription phase, it is an attempt to understand how control is developed and the logic behind the characteristics chosen (what is controlled, when is information gathered etc.). Finally the use phase tries to understand how the data from the control tool contributes to operations, how this should be interpreted and any problems the tool presents.

The researcher uses this checklist of themes to ensure that no theme is forgotten as well as to modulate the order of the themes if necessary so that the interview time frame is efficient. These interviews paid particular attention to what interviewees left unsaid and to their hesitations; we tried to create a climate of empathy and confidence with interviewees (for example, the themes were not necessarily followed in order so as to adapt the session to the interviewees' remarks).

The study in the petrochemical company (E1) concerned a tool for assessing competences in the plant's maintenance department. Interviews were carried out with all types of actors who participated in designing the tool (the change manager who is the pilot and head of the initial project, the plant director who originally designed the tool, the Human Resources Director at that time and various supervisors involved in the tool's design). We also questioned the tool's main users (team heads, employees, the current HR department and trade union representatives).

The study for E2, a local public service department, concerned a quality process deployed in a "*Child and Family"* center that was part of the solidarity department whose director designedthe process. The interviews were undertaken with the tool designers (head of *client relations*, then the head of the "*Management and Assessment department*" during the adjustment phase*)* but also with the main users (members of the project group comprising the heads of the Solidarity unit and the Parental education unit concerned, the Director of solidarity and the two receptionists who played an important role in the deployment of the process).

To process the interviews we identified coding themes and distributed the data among these, following the steps proposed by Armand Hatchuel, that is to say, prescription, use (marked by the crisis of the prescriptive relationship) and the exit from the prescriptive relationship crisis. During post coding, we made a number of changes in the list of themes. A first level of coding was used to reduce the diversity of data and summarize the important

parts of the interviews. This coding then enabled us to combine the relevant information for each step.

22. The control tools studied

The tool for evaluating competences (E1) was designed for and used in a French petrochemical factory, a subsidiary of an American group. This activity sector is highly capitalistic. The cost of manpower is only about 10% of the cost price per tonne of plastic produced. This means for example that manpower costs half as much as transport (Source: HRM). Conversely, any stoppage in the plant causes huge losses (about 1 million dollars per day of outage). For this reason, any social innovation that helps to develop employees' knowledge, contributes to the plant's reliability and improves employees' motivation or enables them be more efficient has a direct effect on the company's profitability. Even if these innovations have a certain cost in terms of salary, they are worthwhile for management because they remain relatively inexpensive compared to gains from higher production.

This link between social innovation and economic performance is so significant that in the 1970's, this American oil company established a special department for "organizational development" (OD). In this department, an international work group (made up of Texans, Australians, French, etc.) worked on a plan to design the "Plant of the future"; the objective was to enrich the jobs of plant operators, rewarding competences and reducing hierarchy.

The other characteristic of this plant was to be "grass roots", that is to say, it was built in a field from nothing. This absence of constraint made the plant a perfect place to implement the OD department's ideas. Top management called on the French representative of the work group to design the work organization and the HR policy and tools. Today, this individual clearly declares "*we had carte blanche"*. Among other things he built a tool for evaluating the competences of the maintenance technicians. This tool can be summarized as follows (box 1).

Elements of the tool for evaluating competences

1- Competences organized along 2 axes:

- "technical" aspects: a specific axis for each job (instrumentation, electricity, mechanics, etc.). However each maintenance technician can accumulate several jobs: i.e. be multiskilled (instrumentation and electricity, and mechanics).

- An transversal axis that charts competences common to all the company's jobs (computer skills, security, quality, etc.)

2- Three levels for each axis:

Each axis is divided into three levels of levels of skills increasing in difficulty.

3- Coefficients to reward the competences:

Each level acquired in an axis (technical or transversal) attributes the employee with the coefficient immediately above according to the terms reached in a grid collectively negociated.

Box 1. Description of the tool for evaluating competences [E1]

This competency framework contains several levels of competences (called echelons). It enables middle managers to validate the individual competences of subordinates and link them to rewards (coefficient). Depending on company needs and the expectations of each employee, middle managers propose a career progression and define relevant training needs. During the annual appraisal interviews, individual salary raises are determined, any conflicts being resolved by a committee.

The quality control tool [E2] focuses on the deployment of a quality process comprising a charter of commitment to quality and a satisfaction survey used in the "*Children-Families"* section of the Solidarity department. These tools were firstly tried out in two UTS (Local authority solidarity departments) and in the AEP (Parental Guidance). They were then extended to all other areas (beyond the "*Children-Families"* section).

The Council responsible for a Department comprises seven UTS, those studied being situated in outer city areas. The UTS department is the local branch of the "*Children-Families"* section and is responsible for "*setting up the missions of the council in the areas of career guidance, integration, protection, prevention and autonomy for children and families"* (Annual report).

The AEP is part of the Solidarity Department. It is aimed at parents, supporting them in bringing up their children and better understanding their relationship with children and adolescents. The AEP sets up group interviews comprising social workers, parents and children with relational difficulties. During these exchanges with the family, the local authority coordinates each case (preparation of AEP measures, management of relevant information, seeking solutions inside the family).

The deployment of the quality process is part of an overall policy in place since 2007. This policy aimed to improve the way people were received by this Council (this involved notably a completely new training process and a series of seminars). Box 2 below summarizes the tool.

Elements of the quality control tool

1- A charter comprising five commitments to the public:

- courtesy,
- response or appointment within a maximum of 15 days, by registered mail,
- making sure people see the right person,
- facilitating contacts (giving name and phone number of the person in charge of the file),

- respect confidentiality.

The quality charter was posted as a notice and explanatory leaflets were available in all the relevant centers.

2- A satisfaction survey was given to users in order to measure their satisfaction in a structured manner. This was a point by point anonymous questionnaire given out by the social workers in an envelope with an explanatory letter from the head of the "*Children-Families"* section with a stamped addressed envelope for return.

117 questionnaires were collected, 30 of which had additional comments.

The survey results were diffused in the relevant departments, on the intranet, in the Solidarity Department's annual activity report and in the internal journal of the local authority.

Box 2. Description of quality control tool [E2]

The launch of this quality process comprised a measure of commitment and evaluation. The tool's designer, the Director of the Solidarity department, aimed to initiate a *"new work culture"* emphasizing quality of service for users. This prescription to incite new behavior is mentioned in the minutes of the "*user relations quality"* project group meeting. This meeting focused on launching the quality process and included the head of "*user relations"*, the Director of solidarity and the heads of the relevant UTS and AEPs. "*This project will enable us to rethink our user relations' policy so that we can obtain a new organization and new behaviors thus improving the quality of our user relations"* (Meeting minutes).

3. The evolution of E-C usages in the two case studies

The analysis of these two case studies shows that the uses of control tools demonstrate how the E-C dimensions work as identified in the introduction to this paper.. The two tools evolve symmetrically. Tool E I, initially conceived as empowering, progressively became more and more constraining, whereas E2 whose prescription was originally rather constraining, gradually became more empowering during the use and adjustment phases.

3 1. The dynamic of E-C use [E1]: the tool for evaluating competences.

311. The design phase: empowerment with a few elements of constraint

In this company, the tool for evaluating competences was designed to empower employees. The original idea was that employees have a capital of competences, and if the company enables these to be implemented (particularly through recognizing, valuing and rewarding these competences), employees will stand to gain and so will the company itself (increased productivity and performance). As described above, in this sector of heavy industry, the reliability of machines is a key to the plant's overall performance. The more reliable the machines, the more tonnes of plastic can be produced, thus the higher the profitability and

efficiency. Therefore the know-how of the technicians who maintain the machines is vital for the company's performance.

It is immediately evident that the idea behind this tool goes beyond simply evaluating competences. This evaluation is only the implementation of a philosophy whose reach is far broader. This "*philosophy*" existed right at the plant's inception; it even had a name: « *Plant of the future"*. Empowerment, autonomy, polyvalence, rewarding competences and shrinking the hierarchy are at the heart of the organizational and strategic thinking of the French management of this plant.

For example, in order to encourage the emergence of the virtuous circle linking employees' competences with the firm's overall performance, *team leaders* were recruited two years before the plant was in operation. These staff members thus took part in designing tools for recruiting their future team members. They also led and/or followed the long training period (6 months) set up before the plant's launch in order to ensure that new hires were up to speed. This training was given on site in a "*bungalow*" (AV, Head of maintenance team). It was here that the myth of the "training Bungalow", was constructed: employees' current discourse shows that the "training bungalow" was the place where the shared vision of work and company strategy was forged.

During the "bungalow" training course, the emphasis was on the organizational concepts that were supposed to be achieved at the "*Plant of the future"*. This philosophy proposes an organization based on employees' competences. This organizational schema, that allows employees a large amount of autonomy, is essentially translated into a tool for rewarding the maintenance technicians for their competences. *Team leaders* were directly involved in designing the tool. At that time, the trade unions were not yet present in the firm, thus the tools did not result from negotiations.

The interviews carried out in this firm illustrate that, at first, the use of this tool seems to have been relatively coherent with the logic of empowerment. Whatever their position within the company, the employees interviewed consider that the tool for rewarding competences was at first quite relevant and efficient: *"The message when they hired you was precisely that they took account of multiskills […]. I'm one of the ones who benefited from this because I had quite a few coefficients, so for me, it was rising all the time. […].Multiskill, means doing the basic job and acquiring skills in other directions that obviously mean you get higher coefficients and more pay … and for them [Management, Ed.] it's also a good thing. When I'm on call, they can call me for instrumentation as well as for the electricity"* (YL, Maintenance technician).

Many other verbatims show that this perception was largely shared in the firm at that time. Thus, a *team leader* confirms: *"at the beginning, everyone really wanted to use this tool. We found that competences were a good way of motivating our guys [...] I think that at first, we really believed in it, we thought that it could be a new way of managing a team"* (IC, Maintenance Team leader).

The maintenance technicians quickly understood that their interest lay in "*playing the system"* (HB, maintenance technician). Engaging in new activities and mastering new jobs enabled them to increase their salary and/or their coefficient from the moment that these were authorized by the hierarchy. Moreover, from the other side, the *team leaders* agreed that they considered this tool helped them to build competent teams that could respond to unforeseen events in the job.

Even if empowerment dominates and is supported by a well developed philosophy, constraint is also present. For example, employees cannot be recognized and rewarded for just any competence. The reference used to evaluate competences during the annual appraisal interview lists a certain number of skills that are expected by both the management and the maintenance technicians. *("Carry out a standard exchange for a pump", "make comments on a construction plan", etc.);* Technicians are only evaluated and potentially rewarded on the basis of these skills alone. For certain employees, the tool clearly "*increased management demands"* (TR, maintenance technician).

312. A phase of control tool use characterized by the emergence of new knowledge: extended multiskill

In terms of the most empowering aspects of this control tool, two alarm signals quickly appeared during the use phase. Firstly, rewards in the company were artificially high because management accepted to pay a high amount of overtime to make sure that the new plant would get off to an efficient start. The "constraint dimension" was thus artificially reduced while the tool's empowering capacity was overestimated. With this tool everything seemed possible, and all competences seemed to be recognized.

However, above all the tool led to a top-heavy salary bill. Since recognized competences resulted in individual pay rises, the tool was quickly seen as "over empowering". Also, some competences were validated almost too, easily. "*Well, it's true, some team leaders don't look too closely at certain technicians. If you really want to validate someone's competence, you just tick the box, that's all... Some technicians practically didn't even have to ask to get their boxes ticked"* (LB, Maintenance technician).

The main *team leader* also observes: "*it was a bit like a kick-off euphoria. […] Some of the guys played at checking the boxes... We took a bit of time to realize that we didn't necessarily get the results we expected"* (AV). The employees seem to share this diagnosis: *"everyone knew that we couldn't keep up this rhythm* [of increasing remuneration Ed.]. *At one point or another, something had to change …"* (LB**,** Maintenance technician).

These alarm signals gradually resulted in team leaders developing uses that were less empowering. They did not really give up the original philosophy. The official HRM policy was that "*competences have to be validated"* (SP, Head of HR). Nevertheless, the *team leaders* gradually developed uses of the tool that were far more constraining. From now on, the objective was to recognize and remunerate competences that were "*useful for business […] that corresponds to business needs"* (AV, *team leader* maintenance) and not the whole set of competences employees developed, whatever they might be.

This phase of the prescriptive relationship crisis was characterized, as expected, by the emergence of unforeseen knowledge on the part of users, in particular "*extended multiskill*". The use of the reference grid showed that the tool designers had built this tool with the implicit hypothesis of a "*reduced multiskill"*. This supposes that to have efficient teams, the firm seeks employees who are experts in one job, with a reasonably high level of competence in one or two other jobs at most. This "*reduced multiskill*" corresponds to a cone shaped model where out of six maintenance jobs, each employee is only competent in two or three.

Now the maintenance technicians quickly interpreted "*multiskill*" in an *extended* use of the term. Since the first levels of each job were obviously the easiest to obtain, the technicians developed competences in all the jobs (including those with little relevance to their own main competence) in order to obtain as high a salary as possible. This "*extended multiskill*" corresponds to a much broader based model making it more difficult to set in motion a virtuous circle of developing competences and performance because it brought together competences that were not necessarily complementary and whose interaction was infrequent. ,

The slippage from the implicitly expected "*reduced multiskill*" to the "*extended multiskill*", led to a blockage in the tool. The multiskill did not manage to develop the organization's performance. As one of the maintenance *team leaders* explained: "*We saw what we called "amateurs" appearing that is, people who got all the first levels of more or less all the possible maintenance jobs. Since these levels were often easy to get, it didn't take too much effort, and they still increased their pay... Then, it's obvious that for the business, it was not really worth it... These "amateurs" didn't always contribute much to the team's performance"* (AV, Maintenance *team leader*).

313. Exit from the prescriptive relationship crisis by adjusting the control tool: empowerment is still effective but the constraint is stronger and more legitimate

Observing the inflationary trend of this tool and the emergence of "*extended multiskill*" – knowledge that the tool designers had not considered -, the tool was redesigned taking this knowledge into account; this resulted in a far more constraining tool. Three years after it was first applied, the tool was revised to introduce powerful braking mechanisms thus countering the early empowering dynamic.

Firstly the automatic relationship between reaching an extra level of competence and the attribution of a higher coefficient disappeared. In its place, a new rule was created: from now on, an individual's coefficient was no longer measured by the number of levels obtained in any type of skill (tranversal axis or technical axis). This coefficient now depended on the highest level obtained in a technical specialty. The initial principal of multikskill was thus tempered by a principle of recognizing the value of professional specialization, and only this could henceforth be used to increase salary. Next, the competences in the various grids became stricter and a little less flexible. This contributed to increasing the level of professional requirements considered as essential for validating a level.

At first, these formal changes in the rules governing the tool were accepted by those concerned, because they still did not question the basic empowering philosophy mentioned above. Under the supervision of *team leaders*, several technicians even took part in the process of revising the content of the grids, with a view to updating the competences they contained. The support of these technicians was also encouraged because these revisions would slow down employees' evolution in terms of salary while at the same time potentially lengthening their careers. Indeed in certain specialized domains, an extra level was created (often a fourth) which made it possible to offer wider horizons to some of the technicians who had already chosen to become specialist's years before.

This apparent acceptance should not hide the fact that the people concerned began to question the theme of "*multiskill*" as central basis of individual career development. Firstly the rules adopted introduced a certain lack of clarity around the idea that any acquisition of new and recognized competences would systematically result in a gain in status and salary. Less seriously, competence no longer paid "automatically". Secondly, a certain number of technicians who had set out on a rising career path with a strong progression of their coefficient, now found themselves in the middle, or even at the top of the grids. They started to wonder about how the previous dynamic could be continued, especially with the new rules in place.

Although the empowering dimension did not disappear from the control tool, the constraining dimension seemed to gain strength (only competences really useful for the business were remunerated) when the tool was redesigned. This case thus constitutes a first example of the closely hinged relationship between E-C usages in the deployment of the same control tool.

32. The E-C dynamic of usages of the quality control tool [E2]

In a way that is complementary to what has been described above, the case study below shows how a tool, initially designed with a view to constraint, gradually acquired more empowering usages during the use and adjustment phases.

321. The prescription phase of the control tool: constraint with a few empowering elements

The constraining intention behind this tool appeared in the deployment of a user satisfaction survey within a public service bureau. The tool was presented as a way of following up a Quality Charter. For the Director of Solidarity, as designer, this process constituted a system of qualityprinciples towards which the departments should strive (for example, receiving clients with respect and friendliness, respecting confidentiality, being available, etc.). This process aimed to formulate specific normed objectives of which users were informed via the Quality Charter; the satisfaction questionnaire was a way of checking that the charter was properly applied: "*The final objective is to bring about a new work culture. This work culture should be centered on the user through a commitment that is checked thorough the satisfaction survey"* (AC, Director of solidarity).

This initially constraining prescription involved designing a questionnaire that was to be part of the ongoing implementation of the Charter: *"The advantage of the Charter was that it gave us a tool that people could refer to to suggest directions for the survey. The survey was based on those suggestions. If we had carried out the survey directly, there would have been no direction"* (CG, Head of AEP department).

The person in charge of piloting the project then set up an *ad hoc* group whose aim was to make sure that others participated in elaborating the questionnaire and creating a protocol for analyzing the survey results. This *ad hoc* group comprised the quality project team, a local elected representative and an expert in psychology (considered as "*qualified individuals"*), as well as two agents "*from the field"* (CB). The agents' participation was intended to overcome their reticence, especially regarding the "results culture" image of the tool, for this culture was

perceived as incompatible with public service[1]: *"we refuse the use of the word "control" that has a negative connotation for us, "policing" and surveillance should be avoided"* (CM, Union representative). In the same vein, one of the agents interviewed mentioned the fact that the survey should not equate "*quality of service with profitability or rapidity"* (VC, Receptionist).

It was very important that agents should participate since the heads of department needed the agents to be involved to ensure the tool's reliability. The value of users' comments would depend on the quality of the exchange when the questionnaire was handed out. Asking agents to participate in creating this questionnaire also aimed at dispelling the fears of those who believed it would result in increased surveillance: *"When a survey is proposed, the agents concerned wonder about its purpose, the motives behind it and the legitimacy of the evaluation and criteria used to judge the department's performance"* (LB, Head of UTS1 department).

In order to overcome anxiety regarding the deployment of the survey, the pilot introduced the project by holding regular meetings with assignments to be accomplished and using online discussion and forums. By taking this approach, the pilot was able to make sure that "*the agents concerned were involved in the project and its implementation"* (CG, Head of AEP department).

Beyond managing reticence with regard to the project, this involvement process in fact enabled the tool to evolve by integrating questions that were not part of the Quality Charter. In fact, the group inserted a questions on the suitability of the center's opening hours in order to avoid the agents concerned thinking there was any possible project to extend the opening hours. In order to encourage adhesion to the questionnaire, the project pilot sought to avoid the project being perceived as merely a "rubber stamp". Heads of department and agents were both responsible for content of the questionnaire: *"The process was not easy. We integrated questions that were not in the Charter, for example questions on how helpful our system was […] We had to be very flexible in a project like this"* (CB, In charge of user relations).

The actors involved in elaborating the questionnaire thus obliged the project pilot to somewhat change the original intentions of the tool during its construction. The deployment of the tool shows constraining intentions (trying to change behavior) but also some more empowering uses (integrating knowledge that had not previously been identified).

[1] The culture of public service agents in France runs counter to any idea of targets, performance or results. This explains the particular unwillingness of agents to engage in "results culture".

322. A use phase characterized by the emergence of new knowledge: managing appointments

The constraining aspect appeared to be confirmed when the quality process was first used. By combining a list of commitments (via the commitment charter) and a means of evaluating performance (via a user satisfaction survey), the designer aimed to check that the tool encouraged "quality" behavior by inciting agents to respect predefined quality principles: *"We noticed a real evolution in agents' behavior. That was important for us as it justified our choice. […] This resulted in the department agents saying what we do, doing what we say and seeing how to improve our department by checking what we do"* (AC, Director of solidarity).

To encourage this quality behavior, the process focused on rationalizing the reception process (physical reception, telephone, mail and internet). Agents had, for example, to respect the stages of receiving users actually set out in a quality memo attached to the commitment charter: *"I introduce myself; I identify the user; I create a good atmosphere by smiling; I don't speak too fast...."* (Quality memo). The quality principles are thus rationalized by giving priorities to key stages in reception, the questionnaire checks that the service is implemented by checking on relational skills (eg : aptitude to formulate questions and information, capacity to explain and justify responses to users).

This process encouraged the interiorisation of quality criteria that arose from the agents' own description of what constituted "*good reception practices"*: *"For us, good reception means one which is respectful and pleasant, as well as not making people wait"* (VC, Receptionist). The integration of these practices was also formulated in a register describing "*good reception attitudes*" in order to satisfy users. In its constraining aspect, the process influenced behaviors resulting in a quality mentality: *"each agent has to think of himself or herself as responsible for responding to any demand that comes his or her way"* (CB, User relations).

While maintaining this strongly constraining dimension, the process also revealed itself as a way of empowering the project group members. In particular, it enabled them to better understand users' expectations. The knowledge produced (rates of satisfaction and comments formulated in the questionnaires and transcribed in intermediary documents) in fact facilitated the *ad hoc* group members' perceptions about a particular point of the reception service that had not previously figured in their thinking: managing appointments. Actors were led to wonder about the interest of changing the current appointments system by thinking about what they learned from analyzing users' comments as well as the need to formulate

possibilities for improvements in the Evaluation Report: *"These comments for example, helped us to understand certain responses about making appointments"* (Evaluation report). Interpreting the data helped to analyze the impact of a decision to change the way service was organized by thinking about a specific point of its functioning (analysis of the impacts of giving up the current appointments system): *"This enabled us to see that we should think about our appointments policy and whether we should set up a new way of working"* (MR, Head of UTS2 department).

The reflection focused on possibly changing the current system for one where users could come in at certain times without appointment. The data thus allowed to check that the service provided truly corresponded to user needs by initiating a discussion among group members: *"It helped us to see the impact of our appointments policy. We work by appointment, so the user is received in time and doesn't wait"* (CG, head of AEP department). After these discussions, the heads of the AEP and UTS departments decided to give users more information about how the system worked (for example, show how it contributed to reduce waiting times) and also to inform agents, reminding them of the principle of "*smooth running"* in managing appointments "*be flexible in making appointments"*.

The use phase was thus characterized by an unexpected tangent that showed the tool developing reflexivity, hence empowerment, about how service was delivered (thinking about making appointments after analyzing users' comments). Project group members thus exploited the prescription in an unexpected way; they contributed comments judged "useful" for improving service. When the prescription was implemented, those who used the data thus acquired specific knowledge that had not figured in the original objectives of the tool's designers. This empowering use did not, however, exclude maintaining constraints on behavior because the commitment/evaluation framework initially defined was still applied.

323. Exit from the prescriptive relationship crisis through adjusting the control tool: constraint is still effective but empowerment more evident and more legitimate

For the members of the project group, the use phase provided an opportunity for seeing how the tool could contribute- to better service. This use phase also showed up criticisms of the tool; for example, UTS department heads found that although the questionnaire might be useful for understanding user satisfaction, it relayed absolutely no information as to agents' performance.

These criticisms coupled with agents' doubts about the reception process resulted in uncertainty as to how useful it would be to generalize the tool's deployment beyond the

"Children-family" sector. This uncertainty was reinforced by the ambiguous position of the person in charge of the tool's deployment: his means of action were limited because he had no hierarchical power over the departments concerned. This led the project pilot to think about his own activity, especially about his capacity to ensure that the tool was deployed as initially prescribed.

In this context, the adjustment process focused on the initial objective of deploying the Charter-Survey to all other departments. On the basis of a statement about the experiment, the Director of Solidarity decided that the Quality Charter should be generalized in order to maintain an incentive to keep up the level of quality in all departments: *"I wanted to maintain the incentive for agents through the charter; it was important to keep up this relationship with users that had been welcomed, if we had seen little interest in it, we would have abandoned this tool"* (AC, Director of solidarity).

However the project was modified because the management decided to deploy a "*guide to evaluation of user relations"* instead of systematically using the satisfaction questionnaire in all departments. *"Questionnaires have a lifespan, they can't be effective all the time. We wanted to leave a certain amount of freedom in applying the Charter, while at the same time we said that if there was a problem, we would make a point of launching an enquiry to see what was going on in the department"* (AC, Director of solidarity).

By maintaining a tool for commitment without systematically using the questionnaire, the designer thus wanted to make sure that the essential was accomplished, in other words, that departments respected their quality engagement. However, the evaluation process would be less rigid and the tool adopted according to the needs of each department. The designer thus escaped from his ambiguous situation by partly integrating the users' knowledge into a new and less constraining tool (through maintaining a system of incentive for commitment to users) making the quality process more legitimate in the eyes of the agents.

4. Discussion

After presenting these results, two points seem particularly interesting to discuss: firstly, how the empowering and constraining dimensions of control tools fit together and secondly how this articulation changes over time.

41. Articulation E-C of control tools

Research in the stream initiated by Foucault has mainly dealt with the constraining dimensions of control tools (Hopper & Macintosh, 1993; Townley, 1994; Coopey &

McKinlay, 2010). This is because Foucault himself focused mainly on the microelements that discipline individuals' actions (Foucault, 1975, 1976, 1984). Like Foucault, these authors underline that these control mechanisms were systematically imperfect and partial and they generated individuals' resistance and improvisation (Townley, 1994; Hoskin & Macve, 1988; Miller & Rose, 1990). Brivot & Gendron (2011) for example highlighted in particular that a control tool could ultimately be used by tax lawyers to show up their hitherto unnoticed know-how.

Beyond the fact that in most of these studies this resistance is analyzed as leading to the reinforcement of the control process itself, our results shed light on the contributions of the concept of the prescriptive relationship highlighted by Hatchuel (1996) to account for the empowering dimension of control tools and its effects. If, like Foucault, Hatchuel takes account of the indivisible nature of the power/knowledge relationship, his analysis points more clearly to the empowering dimension of knowledge. The notion of "*prescriptive relationship*" in fact underlines that imposing a prescription systematically creates its own crisis because it causes users' knowledge to emerge, and this knowledge is unknown to designers. The prescriptive relationship observes the concrete mechanisms through which control tools empower their users and concludes that this empowering dimension does not cancel out the constraining dimension, but interacts with it.

The case of the satisfaction survey in the public service departments enabled us to report on this empowering dynamic of control tools and the simultaneous presence of constraint and empowerment. We observed that the satisfaction survey was first conceived with the idea of constraining individuals. The objective was to check that the Quality Charter was properly applied. The survey design constituted a first opportunity for actors' empowerment to emerge, because the agents introduced questions during this design phase that were of interest to them, but that were not covered in the Quality Charter whose application the questionnaire was supposed to verify.

Similarly, the period when the questionnaire results were gathered was initially thought of only from a constraining point of view (to show that agents did not have the behaviors expected by the charter); however, a characteristic of this period was to give wide range to agents' empowerment. These agents developed know-how, unknown by the designers, of "*managing the appointments system"*. In the exit from the prescriptive relationship phase (the adjustment phase) this know-how had a major impact on the rest of the tool's deployment process, since the project designers were led to abandon the idea of generalizing this

satisfaction survey beyond the "*children and family department"* replacing it by a less constraining type of tool such as an "*evaluation guideline"*.

The results of the satisfaction survey case show very clearly that constraint and empowerment co-exist simultaneously in the tools that were developed and that the concept of prescriptive relationship makes it possible to propose a very refined analysis of the empowering dimension.

42. The evolution of E-C uses of control tools

However, our study does not only show that, the constraining and empowering dimensions of control tool use are simultaneous and not successive: in other words, it is not limited to showing that a control tool is neither constraining nor empowering, or one then the other, but both at the same time. It also shows that the articulation of this simultaneity is complex and that it can change over time. While there has often been a tendency to oppose the two dimensions, the results in both our studies show that constraint appears rather as a springboard to empowerment and, conversely, empowerment contributes to producing constraint.

The case of the control tool used to evaluate competences in the petrochemical company demonstrates this dynamic clearly. In this company, the competency framework was initially conceived as an empowering element. It was part of a wider system that considered employees' competences as the basis of a virtuous circle leading to the company's overall performance and giving employees a means for self-development. There was nevertheless a constraint, for employees could not validate all their skills but only those included in the referential.

This is the first type of articulation between constraint and empowerment. However, it changed because the way it was used showed that the system did not produce the expected effects on the company's performance. The users once again developed knowledge that was not anticipated by the designers: they gave priority to "*extended*" multskills, whereas the designers had implicitly thought that the multiskills developed would be "*reduced*". The exit from the prescriptive relationship crisis resulted in a fairly deep transformation of the control tool and a new articulation between constraint and empowerment. Without ceasing to be empowering, this tool became far more constraining (definitions of skills essential for rewards more difficult to achieve, more demanding evaluators, budgets from top management not sufficient for rewarding all skills etc.).

The case of this control tool is thus an example of the dynamic between the constraining and empowering usages of control tools. It also highlights that the concept of the prescriptive relationship contributes to understanding these evolutions.

Conclusion

This research enquired into the dual dimension – constraint and empowerment – of control tools. Two main conclusions can be drawn from the cases above. The first is that control tools systematically contain this dual dimension. In all phases of control tool deployment, it is necessary to analyze both of these aspects in order to fully understand them. The second conclusion is that studying the interactions between these two uses is an important way to better understand how such tools evolve from their initial prescription to their actual use inside organizations' departments. In general, this study has shown that a detailed study of the constraining and empowering dimensions of control tools is a particularly pertinent way of analyzing their content, dynamic and use. This highlights the simultaneous existence of both dimensions that on first glance could appear contradictory; underlining the close links that bind these two dimensions together shows constraint to be the springboard for empowerment and conversely, empowerment as a contributor to producing constraint.

Our results must nevertheless be understood within the limits of the two case studies presented. These cases are probably exemplars for control tools that use control outside the financial dimension. It would thus be very interesting to analyze the existence of this dual dimension (and its evolution) in tools with a more financial aspect. From our point of view, analyzing the complex evolutions of interaction between the constraining and empowering dimensions seems to be a way of better understanding control tool usage.

Appendix 1 : Formal information on the case studies

	E1	**E2**
Main figures	The company comprises 200 employees in a four level hierarchy (flat structure) It is a French subsidiary of an American oil company. A refinery (belonging to the same group) produces various gas and other sub-products of oil (including petrol) from crude oil. From the gases resulting from refining the oil, the company produces various raw forms of plastic materials that are then resold and reworked by specialized plastics manufacturers.	This organization comprises 2 600 peoples of whom about 250 are supervisors (20% in the Solidarity department). The Department is run by applying the *Code Général des Collectivités Territoriales* (set of laws applied to local authority management). The local area concerned has over 500 000 inhabitants. The Department plays a role in many different fields, the main one being solidarity (about 40% of the budget spent on public services in the local authority).
Department/skill	For the maintenance department, the technicians have to ensure the plant's continuous operation (24/7 365 days per year). When the plant was created, the Top Management chose to set up a system of pay for maintenance technicians based on their competences.	Solidarity in the Department comprises social work relative to children, the handicapped, senior citizens, social integration including through work. The "children-Family" center aims to act preventively in favor of family problems and child protection. This center comprises all the prevention services related to families (social work, family protection, mediation services).

References

Bollecker, M. (2007), La recherche sur les contrôleurs de gestion : État de l'art et perspectives, *Comptabilité Contrôle Audit*, 1, (13): 87-106.

Brivot, M. & Gendron, Y. (2011), Beyond panopticism: On the ramifications of surveillance in a contemporary professional setting, *Accounting organizations and society*, 36, (3): 135-155.

Burgess, R. (1982), *Field research: A sourcebook and field manual*: London, George, Allen Irwin.

Coopey, R. & McKinlay, A. (2010), Foucault and fordism, *Labor History*, 51, (1, c.1900-50): 107-125.

Dambrin, C. & Loning H (2008), Systèmes de contrôle interactifs et théories de l'apprentissage : une relecture des travaux de R Simons à l'aune des théories Piagétiennes, *Comptabilité Contrôle Audit*, décembre, Num thématique113-140

Fornerino, M. & Godener, A. (2006), Etre contrôleur de gestion en France aujourd'hui : Conseiller, adapter les outils ... Et surveiller, *Finance Contrôle Stratégie*, 9, (1): 187-208.

Foucault, M. (1975), *Surveiller et punir naissance de la prison*: Gallimard, 360p.

Foucault, M. (1976), *Histoire de la sexualité La volonté de savoir*: Gallimard 224p.

Foucault, M. (1984), *Histoire de la sexualité L'usage des plaisirs*: Gallimard, 296 p.

Gendron, Y. & Baker, R. C. (2005), On interdisciplinary movements: The development of a network of support around foucaltian perspectives in accounting research, *European Accounting Review*, 14, (3): 525-569.

Haggerty, K. D. & Ericson, R. V. (2000), The surveillant assemblage, *British Journal of Sociology*, Vol. No. 51 Issue No. 4 (December 2000) pp. 605–622, 51, (4): 605-622.

Hatchuel, A. (1996), Coopération et conception collective. Variété et crise des rapports de prescription: in Terssac G. (de), Friedberg E., Coopération et conception, Toulouse, Ed. Octarès, 102-121.

Hatchuel, A. (1999), The foucauldian detour : A rebirth of organization theory ?, *Human relations*, 52, (4): 507-519.

Hatchuel, A. (2003), Quel horizon pour les sciences de gestion ? Vers une théorie de l'action collective, (Ed, in David A., H. A., Laufer R., Les nouvelles fondations des sciences de gestion, Paris, Fnege, 7-44.

Hopper, T. & Macintosh, N. (1993), Management accounting as disciplinary practice: The case of ITT under Harold Geneen, *Management Accounting Research*, 4, (3): 181-216.

Hoskin, K. & Macve, R. (1986), Accounting and the examination: A genealogy of disciplinary power, *Accounting Organizations and Society*, vol 11 (2), 105-136.

Hoskin, K. & Macve, R. (1988), The genesis of accountability : The west point connections, *Accounting Organizations and Society*, 13, (1): 37-73.

Huberman, M. & Miles, M. B. (1991), *Analyse des données qualitatives* De Boeck Université, méthodologies à la recherche.

Kosmala, K. & McKernan J.F. (2011), From care of the self to care for the other: Neglected aspects of foucault's late work, *Accounting, Auditing & Accountability Journal*, vol 24 (3), 377-402

Le Texier, T. (2011), Foucault, le pouvoir et l'entreprise : Pour une théorie de la gouvernementalité managériale, *Revue de philosophie économique*, 12, (2): 53-85.

Miller, P. & Rose, N. (1990), Governing economic life, *Economy and Society*: vol 19 (1), 1–31.

Ogden, S. G. (1997), Accounting for organizational performance : The construction of the customer in the privatized water industry, *Accounting Organizations and Society*, 22, (6): 529-556.

Pezet, E. (2004), Discipliner et gouverner : Influence de deux thèmes foucaldiens en sciences de gestion, *Finance Contrôle Stratégie*, 7, (3): 169-189.
Rabardel, P. (2005), Instrument subjectif et développement du pouvoir d'agir In P. Rabardel, P. Modèle du sujet pour la conception. Dialectiques activités développement (pp. 11-29). Toulouse: Octarès Editions.
Ragaigne, A. (2011), Les fonctions de l'évaluation des services publics par la satisfaction des usagers, entre discipline et apprentissage, *Comptabilité, Contrôle, Audit*, 17, (2): 113-136.
Ragin, C. & Becker, H. (1992), *What is a case ? Exploring the foundations of social inquiry*: New-York, Cambridge University Press.
Rouleau, L. (2007), *Théories des organisations. Approches classiques, contemporaines et de l'avant-garde*: Quebec: Presses Universitaires du Quebec.
Simons, R. (1995), *Levers of control: How managers use innovative control systems to drive strategic renewal*: Boston -Mass.: Harvard Business School Press.
Stake, R. (1994), Case studies in Denzin, NK & Lincoln SY (Ed.), Handbook of qualitative research, London, Sage Publications, 236-247.
Townley, B. (1993), Foucault, power/knowledge, and its relevance for human resource management, *Academy of management review*, 18, (3): 518-545.
Townley, B. (1994), *Reframing human resource management. Power, ethics and the subject at work*: Sage.
Townley, B. (2004), Managerial technologies, ethics and managing *Journal of Management Studies*, 43, (1): 425-445.
Vaivio, J. (1999), Examining "the quantified customer", *Accounting, Organizations and Society*, 24: 689-715.