

Mental perceptions and institutional change: Insights from an empirical work on the participation of agricultural organizations to the political making process in Costa Rica

Maître D'Hôtel Elodie

UMR MOISA, CIRAD TERA, INRA-ESR Montpellier

maitred@ensam.inra.fr

Chabaud Didier

METIS - Normandy Business School

D.Chabaud@ecole-management-normandie.fr

Abstract

Do ideas matter? North's analysis is that actors' mental perceptions guide their strategic choices and thus shape the institutional environment. This latter point seems particularly relevant regarding the participation of economic organizations in the political making process. Nevertheless the empirical description of this role has not been clearly established: Few works try to make the impact of actors' mental perceptions on institutional change operational (Dinar and Saleth, 2004). Our aim is to contribute to this empirical description, by leading a comparative study of two farm sectors in Costa Rica, based on a dynamic approach of mental perceptions in relation with the institutional change occurring during the liberalisation process. To do so, we carry out a statistical analysis of mental perceptions through a textual analysis of actors' perceptions of the political making process. Thus, we provide an empirical confirmation that mental models are influenced by specific institutional environments and lead to different political strategies. Then, we show that when an exogenous change occurs in the institutional environment, previous mental models can persist and lead to inefficient behaviours. More generally, our study empirically emphasizes the interest of taking into

account agents' mental perceptions for a better understanding of institutional and economic dynamics.

Introduction

The integration of ideas in the economic analysis of agents' behaviour is a recent issue, that has been retaken and developped in the new institutional economics framework (North 1988, Denzau and North 1994, Knight and North 1997, North 2005). The role of agents' mental perceptions in their strategic choices seems a promising area to enrich the analysis of behaviours that do not seem fully understandable through the reading of their economic interest only. This has shown particularly convincing when analysing actors' participation strategy in political making processes. The ideological component of strategic choices made by individual or collective agents involved in a political activity seem to be influenced by the institutional environment characteristics, and to determine actors' political behaviour. Basically, the institutions defined as "*the rules of the game of a society*" (North 1990, p 3), determine the set of possible choices for the organizations, defined as "*the players*" (North 1990, p4), which can generate a set of mental perceptions. The role of ideas in the agents' choices in this context has been recently emphasized (Denzau and North 1994, Knight and North 1997, North 2005, Grindle 2001). When actors face an institutional change in particular, the process of adaptation can be ruled by ideological factors including mental perceptions inherited from the past, and that can last after an institutional change, and determine actors' capacity to adapt to this change. A key component of this adaptation that can be directly observed is the organizations political action that can resist, adapt, or take part to the institutional change. Institutions are indeed "*subject to change under the organizations actions*" (North 1993, p254). The purpose of this article is to investigate further the idea that the institutional change depends on organizations mental perceptions (North 1990, 1995,

2005). Can we empirically show that actors' mental perceptions play a role in organizational strategic choices? To address this question, we carry out a case study analysing the agricultural organizations taking part to the political making process in two farm sectors in Costa Rica, and we relate political behaviours of organizations to the way they perceive the political process.

One difficulty of the empirical demonstration that ideas influence strategic behaviours is to distinguish two kinds of differences in ideas : (i) ideas that arise from objective economic interests, and that are not necessary to account for the behaviours. These ideas can simply be seen as the actors' consciousness of their economic interest, which differ from one actor to another; (ii) ideas that do not seem to fit perfectly to actors' economic interest and that are necessary to explain paradoxical behaviours. These "paradoxical behaviours" do not necessarily mean that these actors have a non economic rationality, more likely do they account for the dynamic of ideas evolution, that can have a different path from the dynamic of economic interest, and still determine actors' strategies. To that purpose we analyse two traditional farm sectors in Costa Rica (milk and bean sectors) that have evolved in different institutional environments and that are submitted to a global institutional change, which can be roughly defined as the liberalization process. More precisely, Costa Rica accession to the World Trade Organization in 1994 could be considered as an institutional shock for the two sectors, which led to different organizational reactions, and, finally, to different political outcomes: a negotiated 117% tariff price largely protects the milk sector from importations, while a 1% tariff price is threatening the bean sector in its maintenance. In the milk sector, the purchase of economic interest seems to explain the organizations political behaviour (that is to say that mental representations do not seem necessary¹ to interpret their behaviour); whereas in the bean sector, producers' organizations political behaviour cannot be explained in an

¹ Still, mental representations can illustrate the way milk actors are acting in the political making process.

accurate manner without invoking their mental representations. We find that the key difference between these sectors is related to different historical trajectories, which have determined different types of mental perceptions, assessed by a textual statistical analysis. In average, mental perceptions in the bean sector did not put farmers in a favourable position to take active part to the change, on the contrary to the milk sector.

The role of ideas as a determinant of political behaviours in the literature

In this section we present the way cognition concepts have been taken into economical analysis, in theoretical studies but in empirical studies too, focusing more especially on political making studies.

Theoretical insights

Traditionally, cognitive processes have been studied by psychologists and neurobiologists. Hayek is a pioneer in the integration of cognition in the economic analysis. His 1952 book, *The Sensory Order*, develops the “beliefs” concept, that are analyzed as spirit constructs that permit humans to interpret their environment : “*Perception is always an interpretation, it consists in ordering things in one or more objects classes*” (Hayek 1952, p 143). Cognition concepts have been used too in the broad tradition of institutional economics: we found the concept of “*thinking habits*” in the old institutional economics (Commons 1935), and more recently, in the new institutional economics, important assertions were made on the way cognition and institutions are linked. In the 90s, North emphasized the way mental models guide individual or collective choices (North 1988, Denzau and North 1994) and underline their interaction with institutional change (North 1995, Knight and North 1997); lately, North emphasized more particularly the way cognition shapes institutions (North 2005). His central point is that mental models guide actors choices, structure the institutional environment and at the end determine economic efficiency. Nevertheless the empirical description of this role has

not been clearly established yet : following northian tradition, we will see that few works try to make the impact of actors' mental perceptions on institutional change operational.

Opening the rationality black box

In the classical theory, choices are made according to substantive rationality. Agents' perceptions correspond to an objective reality : there is no space for subjective concerns. Classical prescriptions can predict situations of simple, frequent and motivated choices. However, in complex situations, classical prescriptions are insufficient to explain choices, which are made according to specified ideologies (Knight and North, 1997). The complexity can be related to an uncertainty on the choice gains, a low occurrence of the choice, or a lack of information (Denzau and North, 1994). In these cases², the agent has to make his own interpretation of the elements he perceives to take a decision.

Embeddedness, individual and shared mental models

North follows Hayek idea of rational decisions as a product of social and cultural belief systems, and evokes the « *embeddedness of mental models in a social and institutional context* » (North, 2005, p 33). The individual mental models are strongly affected by social interactions: Knight and North define cognition as « *an interacting process involving the internal dynamics of the individual mind and cultural resources found in the social context* » (Knight and North, 1997). In a society, there is some established and recognized shared mental models, explaining a certain “*convergence of individual mental models*” (Denzau and North, 1994), and constituting a path-dependent element of the economic change (North 2005, p 52).

² In our case, the political making process in the liberalized context is a complex situation. The complexity is related to an uncertainty of the results of the political action (political willingness, economical context...), to a lack of information (on international markets, on other political actors...), and to a low frequency of the choices (tariff negotiation as a new process).

Understanding the relations between mental models and institutions

For Knight and North, shared mental models guide choices made by organizations in uncertainty situation, and thus constraint the societies political and economical evolutions (Knight et North, 1997). The same basic idea was present in the Denzau and North paper, which defined institutions as “*external mechanisms that the individuals create to structure their environment on the basis of shared mental models*” (Denzau and North, 1994). North develops that assertion in 2005, considering the institutions as “*the external manifestation of belief systems*” (North 2005, p 49). In feedback, the mental models are subject to change in a permanent dynamic process of interactions with the institutional environment.

At the end: the economic efficiency

Economic efficiency has always been the final point in North’s assertions on the way ideas affect strategic choices and institutional structures (Knight and North 1997, North 2005). In a static way, taking into account ideas helps to explain strategic choices made by economic agents. In a dynamic way, taking into account the evolution of ideas (by the integration of learning process) helps to understand economic changes.

Empirical insights

If several empirical studies deal with the integration of ideas in political making analyses, very few were carried out in the new institutional economics tradition. In the french tradition of political sociology, Muller and Jobert made important assesions on the way politics are made : Muller developped a cognitive approach of public policies in which politics can be seen as constructions of interpretative models of the world (Muller 2000); Jobert studied the dynamic of ideas within various forums that lead to policies elaboration, giving ideas a central role in the constructing process of interests (Jobert 2004). In the tradition of classical economics, Murphin and Shleifer developped a model and linked persuasion processes within groups to the final political decision, showing that “*individual beliefs are flexible*” (Murphy

and Shleifer 2004). In the newly formed institutional political economics, authors like Evans, Hall and Grindle tried to introduce ideas concepts into the analysis of political making processes: Hall described the way keynesianist ideas were adopted in different countries, at different periods of time (Hall 1989); Grindle developed a methodological framework where ideas are approximated as a political resource, and in which group's interpretational modes are particularly relevant to the study of political making processes. Grindle's analyze is quite near to that of North and is meaning of a conceptual proximity between political economics and institutional economics approaches.

Moreover, if there is a consensus in the new institutional economics on the need to include ideological factors further in the analysis, there is no explicit description of the way theses factors determine behaviours. Dinar and Saleth intended to study the way mind changes were shaping water-policies reforms, postulating that "*institutions are subjective constructs*" (Dinar and Saleth 2004, p 26) and that "*perceptual changes are at the core of institutional change*" (Dinar and Saleth 2004, p 70). In spite of creditable efforts to construct an innovating methodological framework, their analysis does not permit us to understand finely the mental perceptions/ objective datas connexion. Most authors still emphasize on the need to carry on empirical research to reinforce northian theory. North's insistence on the relations between ideas, organizations and institutions constitutes a research area that has to be explored in an empirical way (Alston 1996), in order to better understand the mechanisms under action (North 1997, Shirley 2004). The main contribution of this communication is precisely to present a case study that describes how mental representations influence strategic choice made by collective actors in the case of agricultural organizations participation in the political making process during the liberalisation scheme.

A case study methodology

To underline the way ideas affect strategic choices made by organizations, we rely on two contrasted case studies. Each of these case studies corresponds to a traditional agricultural sector in Costa Rica, and has been chosen in function of its dynamics. Regarding the liberalization process, milk and bean sectors, oriented to the domestic market, had to face different stakes : their only protection action's levers are import tariff and quality norms. We propose a modeling of organizations political behaviour that integrates organizations mental perceptions, and with this intention we use a textual analysis software, which implies a specific collection and treatment step.

Modelling the behaviour by integrating mental perceptions

Organizations behaviours are studied through the precise analysis of their participation in the policy making process. This includes the description of organizations' relations with policy makers, and the analysis of the results of their action in terms of public support obtained during the liberalisation process. The efficiency of their action is adequacy of this participation to policy making. The negotiation of import tariff is used as the primary indicator of the result of their participation, in line with basic results of political economy (see for instance Rodrik, 1996). Thus, we analyse more in detail the way milk and bean sectors have negotiated since 1994 their import tariff. To interpret organizations behaviours, we consider their characteristics, that are described and analyzed by the following concepts:

- Their political experience. Experienced organizations will have great ability to obtain gains from their political action: that idea is related with learning and pathdependence concepts (North 1990, 2005).
- Their resources (technical abilities, political network insertion, financial capacities). The more an organization mobilizes resources, the more it will be able to satisfy its objectives (MacCarthy and Zald, 1976).

- Their perception of their environment, and of their own situation in that environment, more specifically the way they perceive and interpret the political making process.

Analysing mental perceptions by using textual statistics

The statistical textual analysis, developed in the 80s, relies on a starting hypothesis that the words employed refer to subjacent mental schemes that can be clarified (Reinert 1986, p 472). The basic objective of the approach is a quantitative definition of lexical specificity (Tournier, 1980) that leads to the production of qualitative structural information. There are many possible methods (see Jenny 1997): we chose to use the lexicometric one because of its decisive contribution as regards to software instrumentalization and of its broad application to social sciences (Brugidou 2000). The Alceste software permitted us to study actors speeches through the frequency of the words used (occurrence calculations) but also through the formal structure of their co-events (co-occurrence calculations).

A global behavioral model

In order to determine if the integration in the analysis of agents' mental perceptions could really permit us a better understanding of their behavior, we led some statistical tests. Our data base was constructed on the basis of interviews with agricultural organizations, and counts a total number of 16 observations³. The aim of the model is to link organizations' behavior to "classical determinants" (such as resources endowment) and to "non classical determinants"(mental perceptions). We detail this model below.

Collecting and processing data

We carried out a series of interviews in Costa Rica, with agricultural producers, organizations leaders, civil servants and firm's representatives. The interviews have been used for three goals: (i) a qualitative understanding of actors' trajectories, their participation in the political making process and the way they perceive their role in the process; (ii) a statistical textual

³ A single organization observed in two situations counts as two observations.

analysis with a specific lexicometric software (Alceste⁴) that helps relating the language used by actors to their mental perceptions; (iii) a descriptive statistical analysis. Seven interviews were carried out in an open way so that each actor could feel free to talk about his situation with his own vocabulary, answering the following question: “*what do you think about the political making process in your sector?*”. The actors interviewed could be either from milk or bean sector, and could represent either producers or industrials, as showed on the Table 2.

Table 2 : Presentation of the interviews carried out in Costa Rica

	Milk sector	Bean sector
Producer	Interview 6	Interview1, Interview 4
Industrial	Interview 5, Interview 7	Interview 2, Interview 3

Results

The two sectors studied have special characteristics concerning the import tariff negotiation process, that we present very briefly here, comparing the 1994 situation with the 2004 situation. We remind that import tariffs are decided by the Foreign Trade Ministry (COMEX).

Table 3 : Participation of organizations to the political making process

		Milk	Bean
Political spaces mobilized	1994	COMEX	Agriculture Ministry (producers), COMEX (industrials)
	2004	COMEX	Agriculture Ministry (producers, industrials), COMEX (industrials)
Political results (import tariff obtained)	1994	117%	1%
	2004	93%	Between 0% and 38%

⁴ From french, meaning “Analysis of Co-occurring Lexemes in Simple Utterances of a Written Text”

If we look at the political spaces used by the bean sector, we see that bean producers tried to negotiate with Agriculture Ministry when strategic decisions were taken in the Ministry of Foreign Trade. That is to say that, contrary to the milk sector, bean sector is not “acting where the constraint is exerted”, that could be seen as paradoxical, and can be qualified as an inefficient allocation of its resources.

Efficiency of the participation in the political making process (PMP)

If we compare the imports policy of bean and milk sectors, we observe important variations. In 1994, when facing World Trade Organization conditions, the bean sector failed to implement an import tariff that could protect the domestic production (1%), while the milk sector obtained a 117% import tariff. The domestic regulation significantly shows in 1994 a low efficiency of the bean producers political participation to the economic and institutional change as compared with the milk sector. To our point of view, this low efficiency it is not a lack of economic interest to take part to the change, but more likely a lack of adaptability to the change. Why don't bean producers implement the adequate political actions in a liberalized environment as the milk sector to get the same negotiation power with the policy makers? To address this question we formulate the following hypothesis: the former institutional environment (before liberalisation) had determined mental perceptions that were corresponding to economic interests during that period; when an institutional change occurred, these mental perceptions have remained for a while, and have led to behaviours that could seem “obsolete” in the new environment, and thus qualified of “inefficient”. In the milk sector, the policies prevailing before the liberalisation included incentives for farmers to take part actively to the political process, and indirectly, have taught organizations to adapt to change. Thus we propose a critical reflexion on the way to take into account the dynamic dimension. Roughly, we can distinguish three periods and compare (between our two sectors

and between the three periods) political environments, political behaviours, and political results (in term of efficiency).

Table 3 : Comparing political making processes according to periods' and sectors'

		Non liberalized context	Liberalized context	
		Period 1 (1984)	Period 2 (1994)	Period 3 (2004)
Political environment : degree of domestic market's protection	Bean	High Prices public support, protection from importations	Low State withdrawal, low protection from importations	Medium Medium protection from the importations
	Milk	High Public regulation of the prices, protection from importations		
Political behaviour : participation to the PMP	Bean	None (position of policies receivers)	Producers : indirect Industrials : direct	Producers and industrials : indirect Industrials : direct
	Milk	Direct (position of policies makers)		
Political results:	Bean	High	Low (producers) High (industrials)	Medium

degree efficiency	of	Milk	High
----------------------	----	------	-------------

To address our question, we need to balance mental representations with the behaviours observed and the results obtained. The major methodological problem is that informing past mental models is skewed, if not impossible. To avoid this bias, we could either refer to ancient documents or question the actors on their past perceptions (which is still an important methodological skew). Unfortunately, few agricultural organizations in Costa Rica do have documents that relate to their political position, and, at this point of the undertaken research, the interviews carried out do not permit us a past exploration of actors' mental models. We will reconsider this difficulty later.

Characterization of mental perception regarding the political making process in each sector

During the interviews, organization's leaders were invited to talk about the way their sector was defending politically its interests. The textual analysis, made on the basis of these responses defined four lexical classes, presented below (double descending classification). Each class corresponds to a specific "*lexical world*", defined on the basis of specific "*representative forms*" linked in a specific way. A factorial analysis represents these classes and identifies the way the two agricultural sectors (and the different interviews) correspond –or not- to these classes (Figure 1). In the following Table, the figures into brackets correspond to the associated chi-square.

Table 5: The four lexical classes obtained with Alceste software

	Class 1 (red one)	Class 2 (green one)	Class 4 (yellow one)	Class 3 (blue one)
Representative forms	Difficult- (14) Differen- (8) Tariff (8)	Support (13) Search (9)	Cooperative (26) Sector (10) Development (6)	Discuss (36), Trade (31) Negociat((25), Foreign (25), Take (24), Minist-

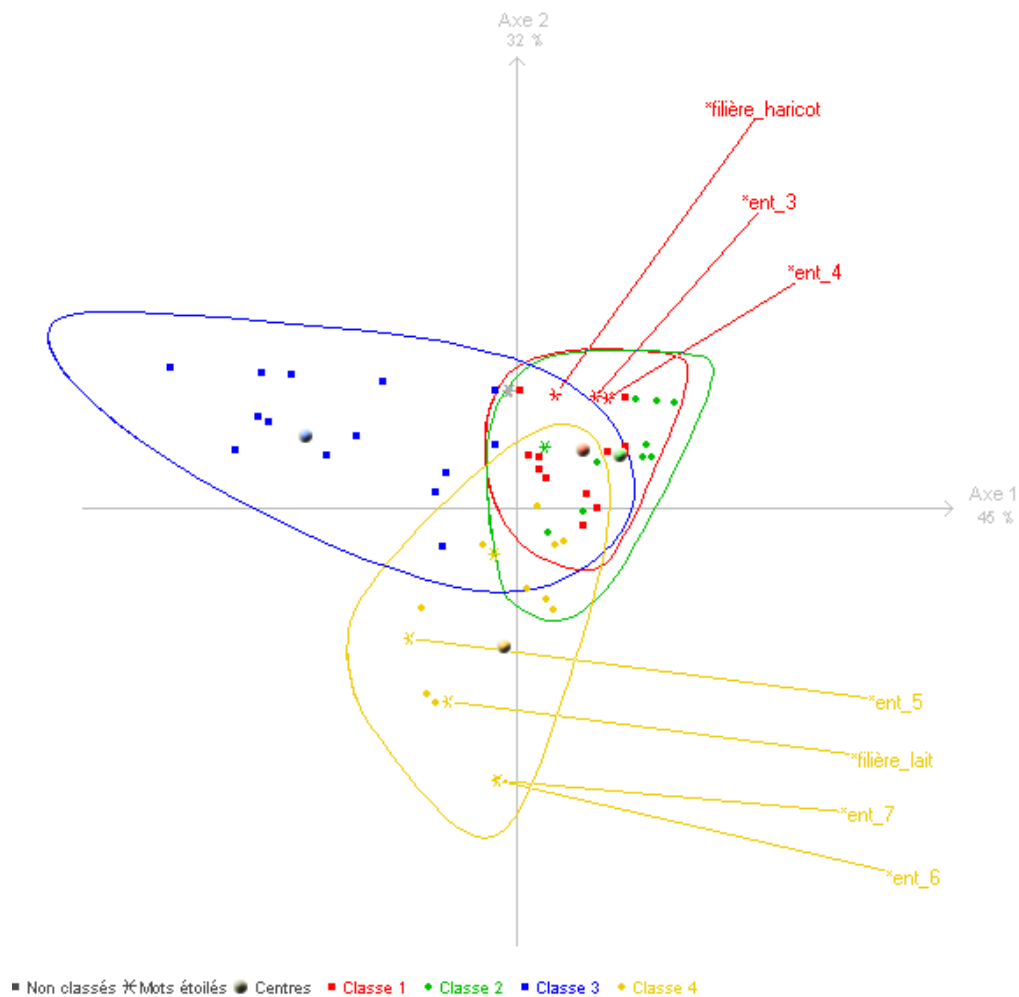
			Represent (6) Relation (5)	(18), Econom- (17), Agricult- (17), Go (17), Decision (10)
Sector variables	Bean sector (20)	Bean sector (8)	Milk sector (58)	
Interviews variables	Interview3 (5) Interview4 (3)	Interview4 (3)	Interview7 (23), Interview5 (14), Interview6 (12)	

The reading of this table provides us several lessons. First, it results that each sector is more particularly represented by a different class (milk sector is highly represented by the class 4, while bean sector is represented by classes 1 and 2) : that is to say that the lexical classes representing mental perceptions of the political making process are significantly different for each sector⁵. Second, we observe that in the milk sector, there is a strong convergence of the mental perceptions of the PMP between the actors interviewed⁶: that means that the milk sector, contrary to the bean sector, is defending a real “vision sector”. Third, the fact that none of the variables is located in the class 3 indicates that this class corresponds to a common field of representation of the political making process.

Figure 1: Factorial analysis obtained with Alceste software

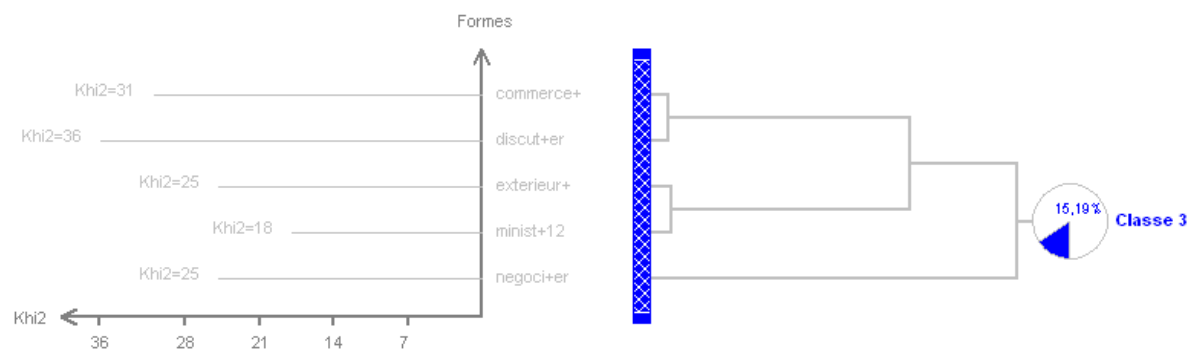
⁵ A signed chi-square test confirms that divergence of perceptions between sectors, showing that classes 1 and 2 (that are best representing the bean sector) are relatively close, and more distant to the class 4 (that is representing the milk sector).

⁶ The interviews 5, 6 and 7 correspond to actors from the milk sector and are all three highly represented by the class 4. In the bean sector, the interviews 1 and 2 do not seem to correspond to a specific class, while the interviews 3 and 4 are slightly represented by the class 1.



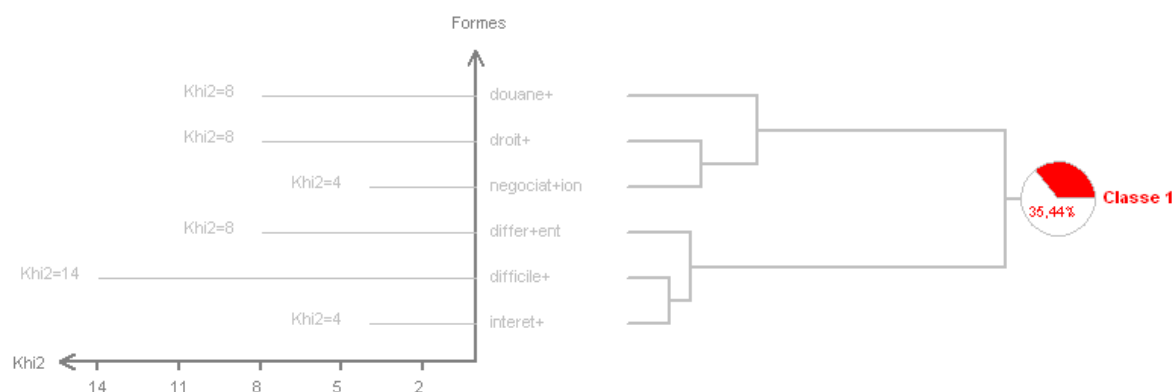
A finer analysis of the different classes' composition allows us a better interpretation of the results obtained. An ascending classification represents the way representative forms are linked together in a given class, and permits us to interpret better the meaning of each class. In the figures 2, 3 and 4, we present that ascending classification.

Figure 2: Ascending classification representing the class 3 (common field of perceptions) obtained with Alceste software



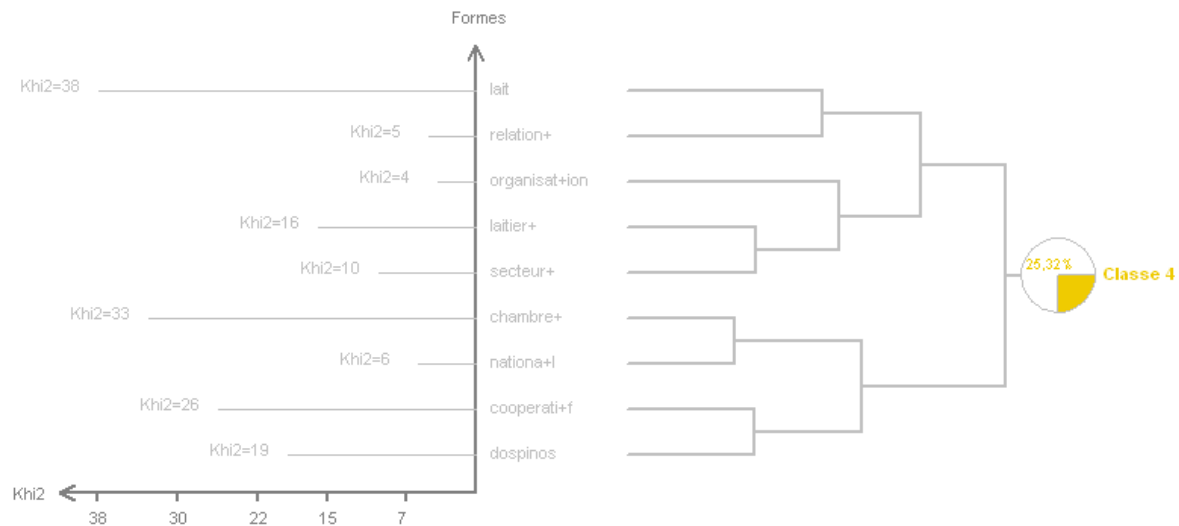
We saw that the class 3 was corresponding to a common field of representation of the political making process. Basically, all the leaders met (from either milk or bean organizations) were aware at once of the type of political action to take (*to discuss, to negotiate*) and of the type of political space to invest (*Ministry of Foreign Trade*).

Figure 3: Ascending classification representing the class 1 (linked to bean sector with a 20 chi-square) obtained with Alceste software



In the class 1, that best represents the bean sector, the stress is laid on the *difficulties* resulting from *divergent interests* and on the economic measures that could resolve theses difficulties (*negociation of tariff policy*).

Figure 4: Ascending classification representing the class 4 (linked to milk sector with a 58 chi-square) obtained with Alceste software



In the class 4, that highly represents the milk sector, the stress is laid on the organization of the milk-sector at the national level (different forms : *cooperative*, *chamber*), and on the relations maintained.

Classical and non classical determinants of political action

The textual analysis results confirm the fact that bean actors' mental perceptions are quite different from those of milk actors, and, more important, seem to indicate a strong correspondence between the way the actors are participating to the political making process and the way they are perceiving and interpreting this process. Thus, in the milk sector, the PMP is perceived as a process where organization is important (see class4), and organizations are participating to the PMP in a pro-active way ; whereas in the bean sector, the focus is made on the difficulties (see class1), and the producers organizations are acting in a defensive way, as if they had to endure the PMP. In order to determine if mental perceptions are necessary to explain organizations behaviors, we need to consider more classical characteristics, as presented in the Table 6 Below.

Table 6 : "Classical" determinants of organizations' participation to the PMP

Organizations characteristics	Milk sector	Bean sector
-------------------------------	-------------	-------------

			Producers	Industrials
Resources mobilized	Technical abilities	Strong	Weak	Strong
	Financial capabilities	Strong	None	Medium
	Political network insertion	Strong	Weak	Medium
Political experience in 1994		50 years	None	

A quick reading of this table confirms the intuitive features that “classical” determinants of organization political action (resources endowment, experience) are favourable factors for organizations to obtain better political results. We then carry out statistical tests in order to determine if the bellowing to one or another lexical class (Alceste results) is significantly determinant to explain organizations participation to the PMP. The variable to be explained is an indicator of the degree of participation, which values are between 0 (passive participation) and 6 (active participation). The indicator is treated as a quantitative variable and was constructed on the basis of qualitative variables (regularity of the meetings, frequency of the meetings, ofensivity of the position, existence of a concertation process). The explanatory variables are qualitative: we distinguish “classical” variables (network insertion, technical abilities, financial capacities) and “non classical” ones, obtained with textual analysis (if the probability to below to a given lexical class is higher than zero, then the variable takes the 1 value). In the Table 7 below, we indicate the results of the statistical tests made.

Table 7 : Results of the statistical tests

Explanatory variables (yes = 1, no =0)	Expected effect	Direct measured effect Fischer test	Combined measured effect Linear regression

Classical	Good network insertion	Linked (+)	Linked (+) F = 26,9 (0,000)	Linked (+) B = 2,3 (0,000)
	Good technical abilities	Linked (+)	Linked (+) F = 50,2 (0,000)	Linked (+) B = 1,8 (0,004)
	Good financial capacities	Linked (+)	Linked (+) F = 10,7 (0,005)	Not linked B = 0,0 (1,000)
Mental models	Bellows to class1	Linked (-)	Linked (-) F = 17,8 (0,001)	Dropped
	Bellows to class2	Linked (-)	Linked (-) F = 3,8 (0,070)	Not linked B = 0,0 (1,000)
	Bellows to class3	Not linked	Not linked F = 2,1 (0,164)	Not linked B = 0,0 (1,000)
	Bellows to class4	Linked (+)	Linked (+) F = 17,8 (0,001)	Linked (+) B = 1,5 (0,004)

The mental models variables are significantly linked to the organizations participation: they confirm the hypothesis that “mental representations matter”.

Discussion : mental perceptions and change

We saw that it is very difficult to give information about past mental perceptions. However, we can give information about past institutional environments and past behaviors, and relate these past elements with current mental perceptions, which allow us in this part to lead a discussion on the origins and dynamics of mental perceptions.

Mental perceptions arise from specific institutional environments

Depending on the institutional environments, a same mental model can lead to efficient or inefficient behaviours

We saw that in a liberalized context, mental models in the bean sector could appear as “obsolete”, when they seem adequate in the milk sector. But if we look the context before liberalization, it gives quite a different picture. Indeed, in the bean sector, the institutional environment was basically made of public support to farmers under the form of production subsidies ruled by the ministry of agriculture: farmers were in position of “receiving” a stable public support without having to negotiate it. The point is that a specific mental model that appears as inadequate in a situation could have been perfectly adequate and have led to efficient behaviours in a past situation.

Mental models are inherited from past institutional environments

The previous point leads us to the statement that mainly mental models are inherited from the past. Thus, we have to reinterpret the bean and milk situation regarding their respective histories. The bean sector used to receive important public supports without really participating to the definition of these public supports, which could better explain their “inappropriate” present attitude. In the milk sector, there were important public regulations too but the key difference is that professional organizations used to negotiate the regulations content, and were encouraged – or forced – to do so. This past of strong and frequent interactions between the sector and the government explains that mental models refers to very active forms of acting and leads to efficient political results. The fact that the milk sector organized itself politically a long time ago explains the mental perceptions convergence observed in the Alceste results, and the fact that a real sector vision exist. On the contrary, the bean sector political organization is quite recent, and partly explains the divergence of mental models observed.

Confronted to new institutional environments, mental models change gradually

The dynamics of institutional change, when it is exogenous, can be much faster than the dynamic of ideas, leading to situations of inefficiency. Anyway, mental models are submitted

to gradual change with experience accumulation. Let's take the example once again of the bean sector. In the 1994 situation the producers behaviour appeared inefficient in regard of their economic interests. But if we take a look at the 2004 situation, we observe that –taking into account the same concepts- their behaviour is much more efficient: professional organizations are more active, and do not refer anymore to Agriculture Ministry as the only relevant interlocutor. That means that bean organizations have shifted in ten years from a passive attitude towards policies to a more active and better targeted one (better insertion in political networks, better technical endowment....) that enable them to defend in a more accurate way the domestic production.

Conclusion

The way political actors represent themselves in the political making process explains the way they act in that process to a large extent, and at the end the different political results observed. The empirical implication is that some sectors managed to put into place political activity that ensures their survival in a liberalized environment, while others are facing the liberalization situation in a more passive way. Our contribution is, following North's steps, to confirm empirically that mental models developed themselves in specific institutional environments (and thus correspond to these environments), but also that when an exogenous change occurs in those environments, the former mental models could persist and lead to inefficient behaviours. Furthermore, we demonstrate that if actors' mental models are inherent to the past, they could also evolve when confronted to a new institutional environment (towards a model that fits this specific environment, following learning processes). Nevertheless, this evolution process is sometimes slow and gradual, depending on the adaptability that they have got or not in the past.

However, our study points out important methodological limits. First, it is very difficult to take into account the mental models dynamics, and especially to inform past mental models. It would be possible to ask actors about their past perceptions of past situations, but it will remain their actual representation of a past situation, and thus it would still constitute a methodological bias. Second, we tried to weigh the mental models role against that of more traditional determinants of the behaviour on a global model, but at that point, the statistics lead where based on a restricted number of observations.

Bibliography

- Alston, L. (1996). Empirical work in institutional economics: an overview. Empirical Studies in Institutional Change. L. Alston, T. Eggertsson and D. North. Cambridge, Cambridge University Press: 25-30.
- Bessy C. (2002). Institutional embeddedness of economic exchange: convergence between new institutional economics and the economics of conventions. In Favereau O. and Lazega E., *Conventions and structures in economic organization*. London, Edward Elgar Publishing.
- Brugidou M (2000), Les facteurs de choix et d'utilisation de logiciels d'analyse de données textuelles, *Cinquièmes Journées Internationales d'Analyse Statistique des Données Textuelles*, Lausanne, 8p.
- Commons J.R. (1935). The place of economics in social philosophy. *Journal of Social Philosophy*, Vol 1.
- Denzau A.T. and North D.D. (1994). Shared Mental Models: Ideologies and Institutions. *Kyklos*, Vol 47, Pp 3-30.

- Grindle, M. (2001). In quest of the political: the political economy of development policy making. Frontiers of development economics: the future in perspective. Meier and Stiglitz. Washington, New York, World Bank, Oxford University Press: 345-389.
- Hayek F. (1952), *The Sensory Order: an inquiry into the foundations of theoretical psychology*, Chicago, University of Chicago Press
- Jenny J (1997), Méthodes et pratiques formalisées d'analyse de discours et de contenu dans la recherche sociologique française : état des lieux et essai de classification, *Bulletin de Méthodologie Sociologique*, 54, pp 64-112.
- Knight J. and North D.C. (1997). Explaining the complexity of institutional change. In Weimer, *The political economy of property rights*, Cambridge, Cambridge University Press.
- Muller P. (2000). L'analyse cognitive des politiques publiques, vers une sociologie politique de l'action publique. *Revue Française de Science Politique*, Vol 50, n°2.
- Muller P (2005). Esquisse d'une théorie du changement dans l'action publique: structures, acteurs et cadres cognitifs. *Revue Française de Science Politique*, Vol 55, n°1.
- Murphy K. and Shleifer A. (2004). Persuasion in politics. *American Economic Review Papers and Proceedings*.
- North, D. (1988). "Ideology and political/ economic institutions." Cato Journal 8: 15-28.
- North, D. (1990). Institutions, institutional change and economic performance. Cambridge, Cambridge University Press.

- North, D. (1993). Institutions and economic performance. Rationality, Institutions and Economic Methodology. U. Maki, B. Gustafsson and C. Knused. London, Routledge: 242-261.
- North, D. (1995). The new institutional economics and third world development. The new institutional economics and third world development. Harris, Hunter and Lewis. London and New York, Routledge.
- North, D. (1997). Prologue. The frontiers of the new institutional economics. J. Drobak and J. Nye. San Diego, Academic Press: 3-12.
- North, D. (2005). Understanding the process of economic change. Princeton and Oxford, Princeton University Press.
- Reinert, M. (1986), Un logiciel d'analyse lexicale : Alceste, *Les Cahiers de l'Analyse des Données*, XI, n°4, pp 471-484.
- Rodrik, D. 1996. Understanding Economic Policy Reform. *Journal of Economic Literature*, March 1996.
- Shirley, M. (2004). Institutions and development. International Society on New Institutional Economics, Tucson.
- Tournier, M. (1980), Spécificité politique et spécificité lexicale, *Mots*, 10p.
- Viaud J (2002), Multidimensional analysis of textual data using Alceste and the social representation of unemployment, *European Review of Applied Psychology*, 52,n°3, pp201-212.

