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Food biotechnologies in Italy: a social psychological study.

Thesis for the degree of Doctor of Social Sciences.
To be presented with due permission by the Faculty of Social Sciences of the University of Helsinki for public examination and criticism in the University of Helsinki Auditorium XII, Main Building, on September, 22nd, at 10 am.

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Social psychological studies 16

Publisher:
Department of Social Psychology, University of Helsinki

ISBN 978-952-10-4111-2 (Print)
ISBN 978-952-10-4112-9 (PDF)
ISSN 1457-0475

Cover design: Mari Soini
Cover Photograph: Renato Collavin

ACKNOWLEDGMENTS

I thank first of all the persons and institutions who over a four year period have contributed data used in this work. I am especially indebted to those who benevolently agreed to being recorded and who have allowed the data to be used for research. I am very grateful to Anna-Maija Pirttilä Backman for comments on the work and overarching support in good and bad times. My thanks also go to the colleagues who gave comments and otherwise helped me during this project: Inari Mattsson, Susanna Lähteenoja, Merja Bauters, Monica Pivetti. I am grateful to the participants in the Helsinki social psychology graduate seminar during the academic year 2004-2005 for their comments on my presentations. I warmly acknowledge the colleagues of the PARADYS consortium, in particular the project coordinators, Alfons Bora and Heiko Hausendorf, and the members of the Italian team Giuseppe Pellegrini and Marina Sbisà. This work stems from my participation in the project. Licio Collavin has patiently answered many a question of scientific nature on genes and biotechnologies; thank you *fradi* for teaching me how to do a transgenesis in your lab. John Haviland has provided me with keen advice and racking criticisms. I thank him for both his patience and his impatience. I am very much obliged to Margareth Wetherell for her several comments and criticisms on the first draft of the thesis. They greatly helped me to make improvements on this work. I also wish to warmly thank John Moore, Chair of the Department of Linguistics at UCSD, for my affiliation as visiting sholar in 2006 and 2007.
During my doctoral study I have been financially supported by a Marie Curie fellowship from the European PhD in Social Representations and Communication, by a Helsinki University grant and by a grant from Finnish CIMO (Center for International Mobility).

Cardiff, California, 31 August 2007
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1 INTRODUCTION

1.1 Topic of the study

This work is concerned with the conflicting representations of genetically modified organisms (herein GMOs) that are found in Italian society. It appears that health and environment issues, deeply rooted fears, moral concerns and cultural values all play a part in the heated debate over the growth and commercialization of genetically modified foodstuff in Europe (International Council for science, 2003). In Italy in particular, where food has a notoriously prominent role in cultural identity and in the economy, we see a surprising convergence in the political agenda of both right and left to resist the development, cultivation and import of GMOs in the country (Meldolesi, 2003) regardless of the prescriptions of European legislation or International agreements (Snidico, 2005). There is evidence of widespread concern about the quality and safety of food in Italy (Ferretti & Magudda, 2004), and GMOs are associated in the press and everyday conversation with food scandals like mad cow disease and dioxin-contaminated chicken. Several food industries in Italy have taken a resolute stand in the debate and advertise themselves notifying the consumer that they refuse to make use of GM ingredients (Tassinari, n.d.; Manifesto sulle Biotecnologie, n.d.). Italian local authorities vote to declare councils and regions 'antitransgenici' (literally 'anti-transgenics'). Results from the 2002 Eurobarometer on Biotechnologies show that in Italy support for GM crops decreased by 10% since the previous survey while it is more or less stabilized in France and Germany and increased in all the other countries (Eurobarometer 58, 2002: 17). The same happens with support for GM food: after 1999 most of European countries show increased support while Italy shows a marked decline. In the broader context of agri-food biotechnologies, "Italy is an exceptional case in showing consistent and large declines in support for

both GM crops and GM foods from 1996 to 2002". (Eurobarometer 58, 2002:18). The most recent Euro-Barometer, released on May 2006, holds that in Italy in 2005 34% of the population asserted they support GM foods. Support for GM food in Italy was 61% in 1996, 42% in 1999 and 40% in 2002. (Eurobarometer, 2006,: 21) There is little doubt that for the majority of Italians GMOs are negatively received: in various polls over the last four years Italians state that GMOs worry them "very much" and that they would not purchase such products even if considerably cheaper then the non GM equivalent (SWG, 2002). Conversely, we shall not forget that there is a minority in Italy that does support GMOs. All these attitudes are per se interesting and have been the object of attention in recent years in Italy (Allansdottir & Others, 2001). However, little has been said about the articulation, the inner logic of these conflicting positions in Italy and about the wider sets of values and beliefs they stem from. The topic of this study focuses on both the "what" and the "how" of these different representations. Which arguments are proposed for supporting or criticizing genetically modified foods? This work wants to move beyond snapshot attitudes and look at the articulations of refusal and support for food biotechnologies in Italy. It starts from the assumption that stances toward a complex and unfamiliar item like food biotechnologies is influenced by larger sets of normative cognitive structures shared by parts of the Italian society. GMOs are here considered as a social object which has been constructed by media descriptions and interpersonal communications and has been allocated a place within a wider, structured and polarized metasystem (Doise, 1992) which we can call a system of social representations or an ideology[1]. My assumption is that ideologies are expressed and reproduced in discourse and during social interaction. Consequently, discourse and interactions are the ideal loci for looking at the dynamics in which ideologies are exchanged and modified in society. The assumption of this study is that a

[1] *I consider ideologies to be the often implicit socially shared principles that generate individual standpoints. Ideologies are specifically relevant to matters of power relations within society. I discuss the concept of ideology in section 5.8.*

micro-level analysis of interaction and discourse is likely to reveal how social actors in social situations exchange and reproduce ideologies (van Dijk, 1998). The epistemological perspective of this study is constructionist. I assume that the social world is the only we have access to. I also assume that such world is the product of social practices that are both conventional and factual. (Berger and Luckmann, 1966; Burr, 2003) As a consequence, my assumption is that there is not an "objective" representation of food biotechnologies somehow more "real" then other ones, including the ones offered by the experts in the field. Rather, my starting point in this study is that food biotechnologies are a social construct, described as something different by the discourse of science, that of environmentalism, that of the Catholic Church and so on. However, my study is not so much concerned with how each subject holds a certain view of food GMOs; rather, I want to look at the articulation of knowledge and stance between subjects in the communicative process. My focus is on the inter-subjective processes through which beliefs and practical epistemologies are displayed and rhetorically peddled in interaction. When approaching the topic of biotechnology and reading the many mutually contradictory positions on the table one soon acquires the sense that factuality and objectivity are fundamental in the debate. However, they are fundamental as rhetorical ammunition, not as anchors to reality. In the discussion over biotechnologies, as with any scientific debate turned into an ideological issue, truth and evidence are not aims to reach but tools to win the battle of words and deeds. The topic of this work is what people say about food biotechnologies and how what they say can be linked to their wider sets of beliefs. However, I do not make any assumptions as to internal beliefs underlying discourse. It is subjects themselves, who in their arguments either implicitly or explicitly appeal to wide-scope points of view. Inevitably, when people talk about food biotechnologies they introduce and discuss many other items. GMOs are often described as "very controversial" and characterized by features like being dangerous, having amazing potential, and being a threat to Italian traditional way of farming and eating. Also, when talking about GMOs people discuss why they

were developed in the first place, who wants them, who created them and who profits from them. In any narrative about GMOs, not only GMOs but also scientists, multinational companies, green activists and politicians are all mentioned and given a part, most often as hero or villain. As will be evident, the discussion biotechnology cannot be separated from the attribution of character to the many "actors" involved, who are identified as interest groups and social categories. One can imagine a shared system of knowledge as a multi dimensional matrix where objects are assigned places according to an already predetermined logic. Nowadays, for different subjects GMOs occupy a certain place in their system of knowledge which is linked to a specific view of nature, of science and scientists, of what is the right form of government, what farming is (and should be), to mention only a few of the many social objects that are inextricably linked to the item "GMOs" or "food biotechnologies". GMOs are interesting not so much for their own sake but rather for the cloud of interrelated issues they activate and stir. Like when one pulls on a single strand in a fishnet all the rest of it begins to shift, showing the interconnected structure of the whole, pulling the GMOs cord connects to several socially fundamental matters, and thus brings to the surface other items that are positioned within structured, polarized worldviews. My aim in this work is to open access to those worldviews.

1.2 Main features of the study: discourse analytic approach to representations

Social psychology is concerned with how people make sense of the world. In this work I consider "making sense" to be an activity that depends very heavily on communication (Billig, 1987). Sense-making can in fact be a private activity only to a certain extent: we can be alone with a book we try to understand but we rely on language - a shared, conventional system of signs and meanings - in order to access it. This applies even to inferential activities that focus on signs which are not the

result of the will of another person. We can try on our own to understand a natural phenomenon. However we do it on the basis of our stock of knowledge about how natural processes work, something we have acquired through formal or informal education and that heavily depends on the current beliefs within our culture. In sum, we can think alone but in order to do so we use tools that are shared by our society and that shape the way we think. These tools include language first of all and a whole wealth of organized knowledge we take for granted. This knowledge is not only structured; it is also polarized, colored with ethical, deontic and patemic connotations. Besides, most of the times we don't really have the chance to think on our own; our life is populated by other persons who constantly give us a piece of their mind, starting from the many experts and reportedly knowledgeable persons who provide their viewpoint on mass media to wide audiences, often in a matter of fact manner. However, we are not simply at the receiving end of mass media input. We are protagonists in discussions where we have to think on our feet and arguing is carried out talking and interacting with other persons in the course of what Goffman calls a Social Encounter (Goffman, 1963, 1967), a slippery and emotionally charged event in which every move is a performance which may sooth or frustrate our constant need for social reassurance. Epistemic matters are in these cases anything but theoretical. They are inevitably mingled with questions of social worth, politeness and power. Practical matters also impinge on our assessments. As Edwards and Potter put it, "the epistemologies of our everyday discourse are organized around adequacy and usefulness rather then validity and correctness" (Edwards and Potter, 1992: 16). The natural setting for knowledge acquisition and exchange is the social environment. Opinions and beliefs are formed through communication in the social arena and are inevitably intertwined with the needs and the agendas of individuals and of a certain social position. The ordered stock of opinions and beliefs shared by a social group are the object of Social Representations Theory (herein SRT). SRs have been described by Serge Moscovici, founder of the approach, as "cognitive systems with a logic and language of their own… [SRs] do not represent simply 'opinions

about', 'images of' or 'attitudes towards' but 'theories' or 'branches of knowledge' in their own right, for the discovery and organization of reality". (Moscovici, 1973: xii, quoted in Augoustinos and Walker, 1995: 136). Representations can be conceived as visual images and cognitive structures in the brains of individuals or, when socially shared, as some cognitive entity that group members have in common; in both cases, representations rely on ever present verbal communication to be expressed, exchanged and modified. The premise of this work is that propriety of text – a transcribed conversation, a newspaper article - can shed light on the structures and dynamics of shared beliefs. My assumption is that communication not only embodies depictions of the object of attention; it also reveals the process by which these representations are generated and exchanged within society. For this reason in order to approach representations of GMOs in Italy I will center my attention on the communicative structures of representations. I will focus on discourses as the activity in which people exchange informal opinions, newspapers present a story, or activists and scientists offer their perspective on biotechnologies. These are all concrete ways in which socio cognitive processes of categorization, attribution, persuasion, stereotyping and prejudice are embodied in text and passed on through communication. My approach to language holds that communication amounts to social action (Austin, 1975). Communication produces effects and consequences in the real world. Discursive expression of socially shared knowledge is a rich source for accessing frameworks of the interpretation of social reality. First, I will outline a theory of what interpersonal communication is and how it works.

Communication is an overwhelmingly complex object whose analysis needs to take into account such complexity, and consciously approach it with the appropriate tools; in my view these tools are those developed by disciplines which have long reflected upon the communicative process as a social activity and on language as meaningful social behavior.

The theory of Social Representations provides foundational assumptions about the 'thinking society', as Moscovici calls it, but in order to access social thinking I shall make use of concepts and tools that belong to the

socio-linguistic tradition and discourse analysis (Jaworski & Coupland, 1999; Wetherell, Taylor & Yates, 2001). Within Social Psychology, Jonathan Potter, Margaret Wetherell and Derek Edwards have used discourse analysis for accessing social phenomena (Potter & Wetherell, 1987; Edwards & Potter, 1992, Wetherell & Potter, 1992). This body of studies has been called Discursive Psychology.

'Discourse' is here intended as both a specific form of language use and as a specific form of social interaction (van Dijk, 1990: 164). Discourses are practices that make up our social world; they are the very building blocks of ideologies and socially shared epistemologies.

My approach is much concerned with the actions accomplished by participants with their discourses. Even when a discourse seems to only "describe" or "represent" something, - i.e. biotechnologies – I shall consider it as action. I assume that description is yet another activity which is performed through language (Silverstein, 1976) and that it generates consequences for how social reality is produced and reproduced. I wanted to understand what discourses *do* while supplying a given representation.

Discourses can be seen as indexes of the holding of a certain point of view. Moreover, discourses can reinforce or undermine a certain view of the world; they may function to justify a certain state of affairs or, on the other hand, contribute good grounds for changing it (van Dijk, 1995). Discourses both reveal ideologies and promote them in situated communication settings. A concrete example from something trivial as a butter package will make clear how everyday discourses can embody incompatible perspectives:

GMOs which have been approved for the United States market are considered to be "substantially equivalent" to their non GM counterparts. Substantially equivalent means that the concentrations of toxic, anti-nutritional and allergenic compounds are in the same range in both the parent and the genetically modified variety of a crop (Schauzu, 2000). According to the official and legally binding discourse of the Food and Drug Administration and of the US competent authorities, there is no difference between GM corn which has been authorized for consumption

and a non GM breed because in respect to the relevant chemical and physical proprieties those kernels are the same. It follows that it would be illogical to label foods containing GMOs as different, because they are not different from the other ones in respect to set parameters of relevant chemical components: GMOs and non GMOs are just the same. However, it is the case that to a certain part of U.S. society it matters very much if a food is genetically modified or not, and GMOs are considered anything but equivalent to their non GM counterpart. In Oregon there has even been a referendum over proposed obligatory labeling of GM products, while in Mendocino county (CA) some GMOs cannot be grown. Non GM products have a market niche that allows them to be priced higher then their normal counterparts (i.e. those that do not contain GMOs). There is another discursive representation of GMOs opposed the officially legislated position based on substantial equivalence, and according to this alternative discourse non GM products are different and better then their GM counterpart. Because the two are not equivalent it becomes important to know if a product is GM or not. The "non genetically modified" stamp works as a value-adding feature for a given item. This situation leads to some amusing occurrences when on the same food packages both discourses - the legally binding one and an opposing one - have to find room. Trader Joe's grade AA salted butter for example is made from pasteurized milk of cows who have not been treated with rBST, a genetically modified hormone produced by Monsanto which is used to increase milk production. On the butter's box we find a large round stamp that states: "Our cows just say noooo, our farmer's guarantee, MILK *from cows not treated with rBST". The star in the text points the reader to the following statement, placed at the right bottom of the box: "No significant difference has been shown between milk derived from cows treated with artificial hormones and those not treated with artificial hormones". There seems to be a contradiction here. If there is no significant difference then what's the logic of saying "noooo"? and why stamp the 'noooo' on the butter box? Clearly here the two voices, Trader Joe's and that of legislation, are forced to share the same box. "There is no significant difference" is the voice of the binding

legal discourse, and it must find room on the butter package, otherwise Trader Joe might be liable to be sued by Monsanto for implicitly alleging that Monsanto's hormone is bad or dangerous. So, back to the point I wanted to make, if there were only a single reality, then it should be one way or the other: either the Food and Drug administration is right and the hormone is fine to use, or it isn't and the hormone is dangerous. We might take a realistic position, assume that reality is unitary and that ultimately we will come to know what this hormone really does to cows and to those drinking milk from those cows and if it is safe or harmful. We may believe that one of the two discourses is right, or we might say that we don't have enough evidence: we can think that we may not know for sure today but that one day we will know which of the two is right. However, considering the amount of scientific research being done on GMOs in the last 25 years and the fact that the controversies around them tend to increase rather than decrease, more scientific data are not likely to solve the issue any time soon. The safety of the Monsanto hormone always leads to considerations of wider breadth. Safety and risk concerns are just one aspect of the multi- faceted GMOs issue. There might be other, ethical and environmental reasons to say "noooo" to the GM hormone which have nothing to do with whether and how rBST hormone is harmful for people who drink the milk of cows treated with it. For the rBST hormone, and in general for the GMO debate, issues of "truth" and "reality" are essential and omnipresent as rhetorical ammunition within conflicting discourses, while they are not interesting as hypostatized entities. Truth always serves bigger aims. In this case like in so many others, we are likely to pick our preferred version of the story. We tend to choose the discourse that suits best our beliefs and that serves best our view of the world and our view of ourselves. The matter of choosing one discourse over another is anything but theoretical; it has enormous consequences in the real world as proven by the ongoing dispute which opposes the US and Europe before the WTO (Snidico, 2005) and by dramatic events like the refusal of genetically modified grains as food aid by struggling countries (GM food aid and Africa, n.d.).

From my perspective, the study of the food biotechnologies debate amounts to the study of the way beliefs develop in society and how ideologies shape how people make sense of reality. The complex way in which actors construct their theories of something like GMOs is multi-layered, multi-voiced, action oriented and context dependent. The process of constructing and exchanging a given representation is dialogical. It is dependent on the recipients as much as on the speakers. It can be captured in written texts and in the spam of interactional microtime.

However, my task is not explaining and understanding the mechanisms of human social interaction, the orderly way in which people construct their world and manage to jointly perform their socially shared life. Ethnometodology, Conversation Analysis and Linguistic Anthropology have been addressing such issues and found order in the daily enactment of social life and linguistic communication.

My aim is to make use of linguistically oriented perspectives to access socially shared representations of a given topic, in natural settings and in their full social complexity.

1.3 Aims of the study

1.3.1 Theoretical

The theoretical thrust of my study is to argue for a discourse-based study of Social Representations. I claim that both the notion of SRs and the analysis of discourse are needed at a theoretical level. SRT provides a theory for the reason why ideological positions toward the phenomenon of food biotechnologies arise. Discourse analysis provides a theory explaining the powerful role of text in the development and exchange of representations of food biotechnologies. Discourse analysis also offers the tools for analyzing text as social action. I am aware of the ongoing debate between the two approaches. I dedicate a considerable part of the theoretical chapter to the illustration of key points of disagreements

between exponents of Discursive Psychology and Social Representations Theory. My work owes much to the epistemology and the research methods of Discursive Psychology. Still, I do not share with DP the same programmatic constraint which makes it problematic to move from the level of situated discourses to the level of wider social projects and ideologies. Moscovici's reflections are a compelling reminder of the cognitive role of ideologies:

> In the societies we inhabit today, personal causality is a right-wing explanation and situational causality is a left-wing explanation. Social psychology cannot ignore the fact that the world is structured and organized according to such a division and that this is a permanent one. Indeed, each of us is necessarily compelled to adopt one of these two kinds of causality together with the view of the other which it entails.
>
> *(Moscovici, 1984: 50)*

I hold that "socially situated cognitive representations and processes [social perception, communication, attribution, attraction, impression management, and intergroup contact] at the same time have an important discourse dimension". (van Dijk, 1990). So discourse analysis can be a powerful instrument to reveal the underlying contents, structures and strategies of SRs. (Ibidem)

I espouse an action oriented notion of language use, which derives from the works of Malinowsky, (Ogden & Richards, 1989) Wittgenstein (1952) and Austin (1975). Within social psychology, Billig, (1987; 1997), Potter, Wetherell (Potter & Wetherell, 1987) and Edwards (Edwards & Potter, 1992) have taken on the notion of language as social action. This work follows this tradition while keeping alive a notion of shared representations, or ideologies, as at least theoretically distinguishable from their discursive embodiment.

As van Dijk puts it:

> In my opinion, no sound theoretical or explanatory framework can be set up for any phenomenon dealt with in social psychology without an explicit account of socially shared cognitive representations
>
> *(van Dijk, 1990:165).*

1.3.2 Methodological

At a methodological level, in order to analyze discourse I have selected a number of tools that proved useful in the task of describing what is being done in a certain piece of text. I make use of a selection of the analytical techniques used by van Dijk in his analysis of ideologies in discourse (1995; 1998). This includes analytical units that have particular relevance in the expression of ideology-driven stance: topic selection, polarization, evidential strategies and lexicalization. I use the notion of repertoires (Potter & Wetherell, 1987, Wetherell & Potter, 1988) for describing the recurrent arguments that appear in the data with their corollary of rhetorical styles and keywords. I present long stretches of talk in which different representations of food biotechnologies are offered. I also make use of the concepts used within the broad area of linguistic pragmatics (see Levison, 1983), which have been used for the study of ideological discourse (Verschueren, 2002). I also make use of the notion of positioning (Davies & Harre', 1990) which has been developed within of post structuralist discourse analysis. Overall, I place all these instruments within a theoretical notion of communicative meaning as action oriented, intrinsically indexical, and co-constructed by participants. (Duranti & Goodwin, 1992; Sacks, 1992; Silverstein, 1976)

1.3.3 Empirical

At an empirical level, I wish to contribute a description of the articulations of discourses over food biotechnologies in Italy. I look at text to see how rhetorically these discourses make up scenarios. I sketch a picture not only of GMOs but of lay people, corporations, scientists and activists. I want to show how the representations offered in stretches of

talk from interviews and naturally occurring conversations fit in larger sets of organized and polarized systems of beliefs. The inner logic of these pieces of talk will perhaps be found not at the level of cognitive coherence but rather at the level of strategic action (Edwards & Potter, 1992). Still, strategic action, which can be seen at the micro-level of interaction, is a window on the peculiar aspects of the food biotechnology debate in Italy. While the arguments in the debate have a global dimension, and while they can be found substantially unchanged in the discourses of activists, corporations and scientists worldwide, I will show that in Italy there are local perspectives linked to its specific cultural and social context which so far have not been explored. The importance of food culture and the role of the Catholic Church play a relevant part in the refrain of many discourses in Italy; as the analysis will show they merge in interesting ways with more politically obvious ideological stances in the discourses of participants and in the media.

1.4 Ethical issues

This study required the participation of human subjects. I asked all participants for permission to record. This is the case for both data I collected during the Paradys study and for data I collected for my dissertation. All persons recorded acknowledged and accepted that data were going to be used for academic research. In a few cases some of the participants did not agree to being recorded. As a consequence, data from those interactions amount exclusively to field notes. Where possible the identity of speakers is disguised as subjects are identified as “scientist”, “citizen” and similar. Anonymity of participants cannot be always guaranteed because of the public nature of the field trial and the debates that surrounded it, including press articles and media interviews. In the case of responsible scientists, inspectors and administrators, participants were interviewed in their official persona. Any comment they made off the record is not attributed.

1.5 Authorship

I collected part of the data I analyze here during my participation in an international research project funded by the European Union (I describe the study in chapter 7). Data related to a case of open air experiment with GM plants were collected jointly by my colleague Giuseppe Pellegrini and me. In the appendix I provide the detailed list specifying who collected the data. In the Italian Paradys report (Collavin & Pellegrini, 2004) I discuss fragments from the interviews I conducted and from the public debate, which are here analyzed in chapter 7. The table of content of the Paradys report makes clear that I am the sole author of those analyses. My doctorate research originates in my participation in Paradys, however this study constitutes my own separate investigation. This is an independent piece of research. The analysis of data in this work is entirely mine, as mine are reflections over theory and method. I am the sole responsible for the writing of this thesis.

2 NOTES ON DATA AND METHOD

In this chapter I briefly describe the type of data I analyse. I also clarify the research logic behind the methods of data collection.

2.1 Documents and conversations

This work focuses on the many discourses about food biotechnologies circulating in Italy. To achieve this goal, I have drawn on different sort of materials. I have collected an archive of documents. These include legislation about biotechnologies at the European, Italian and local level; policy papers and international agreements on the environment. I have also collected a large archive of mass media, both national and local: newspaper and magazine articles, food advertisement, web sites of corporations and associations, recordings of television programs. Furthermore, I recorded public events on biotechnologies: conferences organized by committed anti-GMOs activists, public events of the "science for the public" kind, in which biologists illustrate biotechnologies for a lay audience, and one ESF (European Science Foundation) conference in which scientists debated the interface between science and society. I also attended street events against GMOs and on those occasions interviewed participants and passers-by. My archive amounts to roughly a thousand pieces of data. The vast majority of data units are media articles. I have ordered this large and heterogeneous archive in digital format using the software ATLAS.ti. This is reference material and it constitutes both the backdrop and the foundation for the micro-level analysis of text.

A second part of the study involved an ongoing oper-air experiment with GMOs in Italy. I have followed a case in which academic researchers were growing pesticide-resistant rice in a field in the north west of Italy. I carried out an ethnographic study of the field trial as a

member of PARADYS, an international research project funded by the European Union. I describe the PARADYS study in paragraph 7.1. A detailed list of data pertinent to the case is found in the Appendix. I identified the key actors –scientists, inspectors, anti GMO activists, politicians, seed dealers - and interviewed them. I collected different sorts of data related to the case: official papers between decision-makers and researchers and media coverage. I also recorded a public debate on the ongoing field trial and interviewed citizens of the village where the experiment was taking place, both at the time of the debate and one year later. I was able to interview citizens with the help of the village mayor, who introduced me to his acquaintances and participated in some of the resulting conversations. All these data have been digitized, catalogued, and the recordings have been transcribed verbatim. Recordings were done in natural setting – the street, someone's kitchen, the village council's room - and the interviews are unstructured. I let subjects talk freely, providing feedback mostly in the form of monosyllabic backchanneling and nodding, introducing a new argument only when the conversation started to languish (See Briggs, 1986). As a result the interviewees not only provided characterizations of GMOs, they invariably broadened the perspective: they talked about third-world hunger, science education, Italy's superior food culture and traditions, environmental pollution, the bad influence of the United States on the rest of the world, rights of citizens, obesity and much more. Left free to develop an argument in the direction they wanted, interviewees introduced a surprising number of issues as related to GMOs in their thought. The interviews with citizens were conducted in groups and quickly turned into "conversations", with turns interactively distributed in a spontaneous way (Sacks, Scegloff & Jefferson, 1974) and little spoken intervention on my part. Similarly in the public debate participants negotiated topics and turns independently of the interest of the researchers. Speakers expressed themselves as they deemed appropriate for the public situation, fully aware that they were being recorded. These data required a broadening of the spectrum of many arguments about food biotechnologies. The participants' thoughts and

arguments provided a much richer picture than that most social research on biotechnologies assumes. Invariably, talk about risk and 'nature' soon gave way to much wider discussions about the rights of citizens and the role in world government of multinational corporations. In order not to operate a reduction of this multiplicity, I have chosen not to isolate and classify arguments and positions as units. While the notion of repertoire (Potter & Wetherell, 1987) is used in this work, I do not isolate a number of recurring repertoires which all converge on a certain representation of food biotechnologies, as research in Discursive Psychology might proceed. Rather, I have decided to present a limited number of texts trying to keep intact their argumentative structure to expose the inner logic of the text as it is woven by participants. This choice is a function of data I have selected. The authors of these texts do not share the same stakes in the matter of food biotechnologies, and they often propose conflicting representations. Scientists, lay people and anti-GMO activists largely disagree on food biotechnologies. Reading transcripts, one can see how conflict is enacted, and how different representations of GMOs play against each other.

2.2 Eclectic data

In addition to verbal interactions like conversations and interviews, I also make use of written texts. I am aware that the eclectic nature of the data I discuss might produce some perplexity. The different types of linguistic productions I consider belong to disparate genres: they differ in the kind of actor that produces them: some are individuals while others are institutions. They differ in their functions: some are legally binding provisions, some are informal chatting. They also differ in the context of their production and in scope. What they have in common is that they all 'tell a story' about food GMOs even if they do so in very different contexts. I do not try to comparing those data, nor to assess how they impact society's views of GMOs. Rather, I treat all of them as instances of communication that provide a vision of what GMOs are. The setting in

which a certain version is offered is of great significance. Comments made by a minister on prime-time television are likely to have more consequence than those made by lay people in their living rooms. However, the comments made on and off the record by scientists, activists and lay people are as interesting for understanding the phenomenon as publicly voiced opinions on the matter. My concern is not statistical: this work does not aim to establish which socio-demographic sector of Italians would agree with any of the many stories about GMOs that we find in the data. Some stake-bound recurrent arguments do appear. The Italian web sites of the developers of food biotechnologies and those of Italian green associations propound consistently conflicting views of GMOs. The Italian web sites of Monsanto, Syngenta and Novartis offer a view of GMOs which associates them with safety, progress, improvement of agricultural practices, protection of the environment and economic growth for farmers around the world. By contrast, a survey of Italian Greenpeace and V.A.S. (Verdi Ambiente e società) web sites offers a different and equally coherent account of GMOs: they are dangerous for humans and for the environment, likely to produce irreversible disasters of worldwide scale. According to these web sites GMOs have proven to produce allergic reactions, reduce biodiversity and have made farmers poorer all over the world. GMOs are the product of corporations' search for profit. They enrich few while they damage everybody else in the name of a distorted view of progress. These discourses appeal to a clear set of homogeneous values. We have a "corporate" and a "green activist" account of food biotechnologies. There is little need for a detailed academic study in order to describe them: they are neat, predictable and readily available. More interestingly, these engaged, neatly antagonistic official versions of the story are not the only ones on the scene. In fact, their staged and official nature makes them less important for accessing the process of argument construction. We may consider the stereotyped descriptions of GMOs available on official web sites as pieces in a museum or an armory, the reservoir of crystallized argumentative ammunition people make use of when participating in a discussion about

GMOs. Every time GMOs are topic of conversation, participants rely on their beliefs and attitudes to make claims. They use arguments taken from different sources to make their points. The official versions of industries and the official versions of green activists offer strains of arguments that are chosen and creatively deployed in the course of a conversation to further ones point. I am concerned with the set of arguments used to support one particular version and with how those arguments are used during interaction. My starting assumption is that language is used to *construct* a version of the social world; all these discourses are versions, accounts of what GMOs are and largely they give arguments for what one should think about them. My research question focuses on the different accounts I have found in the data also as a window on a wider sets of values and beliefs that are called upon by different actors in order to sustain those versions. For this reason, a newspaper article read by thousands is as interesting as a chat with a village citizen that has just found out about experiments with GM rice in the neighborhood.

The tools for the analysis I use are fit for both written and spoken language. The questions I pose to the data can be fruitfully asked to any piece of language-dependent communication. What all these texts have in common is that they all represent food biotechnologies. The theoretical and methodological grounds for treating such disparate pieces of text lie in the standpoint that sees language as a social phenomenon and verbal communication as a specific kind of social action.

2.3 Data: The Bubbio declaration

Bubbio is a village in the north west of Italy. Bubbio's council was the first to issue an official declaration against GMOs and thus became the first of the many *comuni antitransgenici* (anti-transgenic councils) in Italy. I analyze the declaration because this official document from a local authority embodies several of the key arguments against GMOs peculiar to the Italian context.

2.4 The Catholic Church

Because of the role the Catholic Church plays in politics and public opinion in Italy I deemed it essential to look into Vatican positions with respect to food biotechnologies and reactions to them in the media. I analyze four texts related to the Church's position. The four texts were selected from my database of several hundred documents relevant to GMOs in Italy.

2.5 A field trial

I analyze fragments of the transcripts of a public encounter, a fragment from an interview with a scientist and from multi party conversations. The data all relate to one experiment in which transgenic rice was cultivated in a field near an Italian village. The voices of participants offer different perspectives played against each other, often in a confrontational way.

3 A REVIEW OF SOCIAL PSYCHOLOGICAL STUDIES ON BIOTECHNOLOGIES IN EUROPE.

Scholars in the social sciences have been interested in biotechnologies since their first appearing in the public arena. With the exception of the U.K., in Europe media coverage on any aspect of biotechnologies was rare until the 1990s (Gutteling & Others, 2002:102). However, by 1996 biotechnologies had begun to spark world-wide controversy and occupied a prominent place in European media, including in Italy (Lassen & others, 2002: 305). By that time social scientists were already looking at how society was dealing with the challenges of biotechnologies (Bauer, Gaskell & Durant, 1994). First looks at the specific Italian situation came a little later (Allansdottir, Pammolli & Bagnara, 1998). Today there are countless studies and publications in the area of public policy, sociology, media studies and social psychology which center on biotechnologies. The academic journal "New Genetics and society" is entirely dedicated to the topic seen from the perspective of the social sciences. Academic studies are joined by a number of policy experiments - the Danish Consensus Conference on biotechnologies of 1999 and the Dutch 'mock trial' of 2000, for example - and by large scale public consultations like the one carried out in 2003 in the U.K. under the catchy name "GM Nation?". Consultations and mock trials look into public attitudes to identify key issues and develop 'good practices' for the resolution of techno-scientific conflicts. Such institutional efforts are inspired by the recognition that biotechnologies pose the question of how to govern techno-scientific advancements in democratic ways. Usually consultations are a first step. They set out to monitor public opinions, to explore participative strategies for solving policy conflicts, and to improve decisions. Studies of social aspects of biotechnologies focus on one or more of the following: risk perception; public understanding of

science ethics, trust in institutions and governance of techno-scientific advancements (see Wynne, 1995, Edwards, 2002; Bucchi & Neresini, 2004).

3.1 "Biotechnology and the European Public"

In Europe, the most exhaustive social psychological empirical research on public perceptions of biotechnologies was carried out under the umbrella of a four year multinational and multidisciplinary study. 'Biotechnology and the European public' was funded by the European Union, by various European national institutions and by Canada. It has produced two collective books (Durant, Bauer & Gaskell, 1998 and Bauer & Gaskell, 2002a) and numerous other academic publications. Eighteen nations were involved in the study. The project monitored and interpreted the reception of modern biotechnology in Europe, with some comparative studies conducted in Canada and the USA. Given the broad scope and importance of the research for this thesis I shall sketch its basic features and main results. The project offers a wide longitudinal study which involved dozens of researchers who studied their national situation and collected comparable data for four years within the unifying frame designed by John Durant, Martin Bauer and George Gaskell. The study is based on a model of the reception of new technologies based on the interaction between two main forces. On the one hand there is an active party, which is involved in the production and diffusion of the technology or actively committed against it. This is what authors call the "biotechnology movement". On the other hand there is the social stage where claims and pressures of both parties are played out for the public. The social arena is the arena where the actions of producers and critics of biotechnology come into play, with resulting echoes and reverberations. The "biotechnology movement" struggles to convert a particular representation of the phenomenon into society's "received view". However, 'Biotechnology and the European public' is not focused on the

main protagonists of the biotechnology movement. Instead, the actors and the specific features of the various discourses proposed by the biotechnology movement are largely presupposed as forces which originate a chain of reactions, or, as the authors put it, “hurdle” consequent to the diffusion of biotechnology. The study focuses instead on the results in the public sphere of the actions and discourses of these active parties .

3.2 The public sphere

The study has a three-part architecture covering public policy, media coverage and public perception. The complex interaction between these three areas defines the public sphere of biotechnology (Bauer & Gaskell, 2002a: 5). Accordingly, studies looked at biotechnologies within the three distinct areas. First, Torgersen and colleagues (Torgersen & Others, 2002) report a diachronic study of the developing debate and legislation covering biotechnologies in the EU, from health and safety regulations to food labeling measures and laws on artificial reproduction.

Secondly, researchers in each participant country conducted a longitudinal analysis of biotechnologies in the media in Europe between 1973 and 1996. In the Italian case, researchers analyzed 340 articles related to biotechnologies in the daily newspaper “Il Corriere della sera” to assess how biotechnologies were covered in the media (Gutteling & Others, 2002).

Lastly, a third group of studies targeted public opinion via large scale surveys. Researchers from all participant countries carried out a survey on a representative sample of the European population. Eurobarometer 46.1 was conducted in October and November 1996 to measure public perceptions of biotechnologies. The Eurobarometer, an official and comprehensive periodic survey of the EU, periodically polls representative samples of the European population over age 15. The survey conducted in October 2005 polled 25000 Europeans. The Eurobarometer began to include questions related to biotechnologies in

1991. Since 1996 it has incorporated many of the questions posed by the researchers within the 'Biotechnology and the European public' study. The surveys provide longitudinal and data about public opinion on biotechnologies across Europe.

One of the recurring questions in the debate over biotechnologies is if and how textbook knowledge about biotechnologies affects attitudes. As is widely quoted, only 41% of polled Europeans in 2005 responded correctly to the statement "ordinary tomatoes do not contain genes, while genetically modified ones do" (in 1996 they were 35%). (Eurobarometer 64.3) This datum has given grounds for linking lack of support with lack of scientific literacy. However, one finding from the extensive poll is that people more informed about biotechnology are not necessarily more favorable to them. (Midden & others, 2002). Researchers wanting to measure the correlation between attitude and textbook knowledge made a distinction between two types of knowledge that they called 'objective' and 'subjective'. The assumption of the study is that the two 'types' of knowledge can be distinguished on the basis of the likelihood that they can influence distorted views of biotechnologies. According to the researchers, for instance the belief that normal tomatoes don't have genes or that GM animals are always bigger then their non GM counterpart are especially likely to foster "inaccurate images of biotechnology" (Midden & others, 2002: 218). On the contrary, not knowing that some bacteria can live off waste waters is less likely to produce inaccurate images of biotechnologies. The criterion for the discrimination of the two types of knowledge is perhaps not entirely convincing, and the two types of knowledge are highly correlated. However, the most important finding of the study is that scores measuring knowledge, whether classified as 'objective or 'subjective', are not correlated with the general attitude of the population, defined as 'optimism' or 'pessimism' (Midden & Others, 2002: 219). These general results, obviously with some internal variations, hold true for all the 15 European countries polled in 1996. The important datum is that there is no positive correlation between textbook knowledge and optimistic attitudes toward biotechnologies. The study also found that more extreme attitudes tend to be based on a higher

degree of knowledge, a finding confirmed by later studies in the Italian context (Bucchi & Neresini, 2004).

Given the common topic, the relevance of these studies for my work is apparent. However, while the results of the Eurobarometer surveys are now basic to any further work on biotechnologies, my investigation takes a different perspective, in both scope and method. First, my study focuses on one application of biotechnologies: genetically modified foods. Studies have shown that respondents clearly distinguish between medical and agricultural applications of biotechnologies, and that they are largely more supportive of the former over the latter. While the studies included in Bauer & Gaskell (2002a) make the distinction clear, they focus on general attitudes and images rather than specific representations of food biotechnologies. More important, I adopt a qualitative approach to representations of food biotechnologies. I use the analysis of discourse. Studies conducted under the 'Biotechnologies and the European public' umbrella are mostly based on the statistical analysis of responses from representative samplings of population. Focus groups have been used to isolate the appropriate questions to use in the surveys. By contrast, my data do not come from a representative sampling of the Italian population or of Italian media. Rather, my data are a "narrow but deep" cross session of mass media and conversations on food biotechnologies. Finally, my analysis looks at the detailed linguistic realizations of the representations within the specific contexts of their production in different social situations in Italy. The "Biotechnologies and the European Public" studies are comparative and longitudinal in scope. They thus allow us to see differences and similarities across countries and across time. I take their results as backdrop to my own look at a specific environment and topic over a limited time window.

3.3 Symbolic coping

Wolfgang Wagner (1998), and later Wagner, Kronberger, and Seifert (2002) have proposed a theoretical frame for understanding how the

general public receives a new technology: the theory of symbolic coping with new technology. Following SRT, authors hold that everyday people achieve a common-sense understanding of out-of-reach or "experience distant" phenomena like biotechnologies. One of the main propositions of the theory is that when the public first comes into contact with a new technology, it is heavily dependent on the media, which may present the main features of the technology in a sensational or distorted way. As a consequence for a period of time such a distorted representation is the only information available about the given topic to the public; it may thus achieve the status of 'knowledge'. The theory of symbolic coping holds that the reception of a new technology is a process with various phases. There is a "zero" time, in which people are completely unaware of the new technology, and ultimately a 'normalizing' phase in which lay public has come to grasp at least some of the features of the new technology. In between lies a phase of "symbolic coping" characterized by the fact that 'image-beliefs'-- for example, that GMOs are monstrous or contagious -- have an explanatory role in people's understandings, reflected in their responses to questionnaires, for example. The theory has been developed to explain the reception of biotechnologies in Europe, specifically in Austria and Greece, with data coming from the Eurobarometer surveys of 1996 and 1999.

The theory of symbolic coping shares assumptions with the theory of SRs, but it restricts its scope to new and controversial technological innovations (Wagner, Kronberger & Seifert, 2002: 341). In particular, it assumes a fundamental distinction between everyday thinking and scientific reasoning. The theory of symbolic coping "makes a case in favor of everyday imaginations as being functionally equivalent to scientifically informed knowledge" (Wagner, Kronberger & Seifert, 2002: 341). The study on the reception of biotechnologies in Austria and Greece shows that the level of self-ascribed ignorance, measured as the number of "I don't know" answers in survey replies, tends to decrease even when subjects have taken on image-beliefs rather then correct information about the characteristics of biotechnologies; in this respect

image-beliefs are functionally equivalent to scientifically informed knowledge (Wagner, Kronberger & Seifert, 2002: 341).
The notion of symbolic coping is powerful to explain responses in the 'symbolic coping phase' when people have recently come across the some new phenomenon, but it is less useful to explain later phases in the process. Respondents in my study proved to have an articulated vision of food biotechnologies. Respondents had a view of the features of the technology, of the main actors involved, of their development, and also of its large-scale consequences. Participants had not just a single image or metaphor to offer, but rather they proposed an interconnected set of related arguments and descriptions which showed their understanding of biotechnologies and the overall scenario in which they placed them.

3.4 Images of genes and nature in Europe

Wagner & others (2002) studied the different images of biotechnologies across Europe using the framework of Social Representations Theory. The authors posed questions about biotechnologies that roughly oriented respondents to produce what authors call "content" VS "evaluative" kind of replies, and they organized the replies to identify "discourses" – understood as repertoires of arguments - which recurred in the data. Their results suggest that when respondents associated biotechnologies with scientific research, their attitudes tended to be more optimistic – they related biotechnologies to "progress" (Wagner & Others, 2002: 251). By contrast, when biotechnologies were conceived as manipulation/alteration a dichotomy evoked between 'artificial' and 'natural', with the former negatively evaluated (ibidem). The evaluation of biotechnologies ranges from optimism to ambivalence to rejection. Optimism is based on the hope that biotechnologies will bring improvement of life quality. Rejection is based on perceived risks or on what the authors call "ideological" reasons (Wagner & Others, 2002: 254).The ideological position "judges biotechnologies against the background of general thoughts, values and

assumptions about the nature of humans and their relationship with their environment" (ibidem). Under this category the authors included discourses of "interfering with nature". Respondents used allegories of the Sorcerer's Apprentice and of scientists who wanted to play God (ibidem). GM food in particular was described as artificial, unnatural and somehow polluted. While in each country respondents used local images, GM foods were coherently described as monstrous, and always bigger then their ordinary counterparts. Overall, the contrast between natural and unnatural plays a very important part in the discourses over biotechnologies and "the distinction between natural and unnatural is made synonymous with the distinction between the good and the bad" (Wagner & Others, 2002: 272). The results of this work are confirmed in my study, while the closer perspective I take shows the specific character of Italian discourses over food biotechnologies. Further, my own conception of "ideology" goes beyond general thoughts about nature and assumes a more power-related, political dimension linked to governance, corporate responsibility and social justice. As will be clear, discourses of justice, profit and democracy, which do not figure in Bauer & Gaskell's (2002a) collective book, are prominent in the Italian data I have investigated.

3.5 Summary

Although there have been extensive longitudinal studies on public perceptions of biotechnologies in EU countries, they are largely survey-based and broadly comparative. They offer a "bird's eye" picture of similarities and differences between countries and across time. The results of the 'Biotechnology and the public' research are a starting point for more detailed research in smaller contexts, including the present study. Small scale studies have been carried out on social representations of genetically modified animals in Italy, using the framework of Social Representations Theory, based on focus groups and an association task (Pivetti, 2005). Other studies have focused on social representations of

novel foods, including GMOs, in Finland (Bäckström, A., Pirttilä-Backman, A.M.& Tuorila, H., 2003). However, this is the first discourse-based study to focus on the specific features of Italian representations of food biotechnologies.

4 LEGISLATION ON FOOD BIOTECHNOLOGIES.

Controversy surrounding food biotechnologies is of global scale and represents a challenge for democratic institutions in much the same way as nuclear power. Food biotechnologies have become a platform for reconsidering the principles inspiring European governance in the light of a serious crisis of trust in political institutions, and they have played an important part in a policy shift in the European Union. (Abels, 2002) Before moving to the discussion of how in Italy people and mass media talk about biotechnologies, I provide a broad background about the international and national legislative framework. In the media and in informal discussions I found themes which resound with the preoccupations of legislators at international and national level. A description of the main concepts and of the principles incorporated in the law will provide an anchor to the multiform discourses I analyze. Legislation is the institutional response to the often opposing pressures of economy and society. Its regulatory power imposes an official, ratified discourse of biotechnologies. Such discourse infiltrates other domains and offers an influential perspective which is picked up and re echoed in other, informal domains. Law is the institutional expression of positions, features of which we find voiced also elsewhere. Legislation offers a specific representation of the GMO phenomenon.

In legislation GMOs are routinely characterized as dangerous for the environment and for human health. For this reason, laws and international conventions are especially preoccupied with assessing and the managing risks connected with biotechnologies. The potential threat posed to health and the environment by technological advancements is a central object lesson for more general reflection on the theory and practice of democratic governance. Legislation in Italy clearly tries to protect cultural and economic resources linked to food production;

4.1 International agreements and European legislation

Laws about food biotechnologies govern research and commercial uses of GMOs. I shall not discuss norms that specify safety measures for laboratory experiments with GM organisms and micro-organisms. I will instead illustrate in some detail institutional texts and laws that focus on the three following areas: field trials, commercialization of GM foodstuff, and commercial farming.

4.2 Field trials:

Field trials are scientific experiments in which genetically modified plants are farmed for purpose of study. In EU legislation these open air experiments are called “deliberate releases”. The risk normally associated with deliberate releases is that farmed GM plants might breed with sexually compatible conventional local varieties, thus spreading the inserted genetic trait or otherwise negatively affecting the local environment. Field trials are usually very small, to reduce their impact in contrast to that of cultivated commercial crops. A number of safety measures are prescribed to limit interactions between GM crops and the rest of the environment. Experiments are authorized by competent EU and Member State authorities. Plants being farmed for scientific purposes have undergone previous laboratory studies and have been assessed to be safe enough to warrant further testing. They are not varieties that can be commercialized yet.

4.3 Commercialization of GM food and feed:

Commercialization implies admitting some GM and GM derived products into food sold in the country in question. Final products (like candy bars, soft drinks or tortilla chips) or GM ingredients (like flour and starches) and animal feed can be imported and used in the food production chain. In Italy for example certain imported GMOs can legally be present in food and feed if they are labeled according to law.

4.4 Commercial farming:

Commercial farming clearly requires that authorized GM varieties can be grown in the country and enter the food chain. It is never the case that laws permit the cultivation of a given variety but not its commercialization. In Italy no GM varieties can be farmed.

4.5 A legal definition of GMOs

The EU 2001/18 Directive provides basic legal descriptions of genetically modified organisms, descriptions which have been integrated into Italian legislation:

> For the purposes of this Directive: “organism” means any biological entity capable of replication or of transferring genetic material;
>
> “genetically modified organism (GMO)” means an organism, with the exception of human beings, in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination;
>
> *(EU 200/18, Article2, Definitions)*

Italian laws on GMOs depend on EU Directives and Regulations. In turn, EU legislation is informed by the provisions of international agreements and by the overall policy that inspires governance in the Union. As a result, Italian institutional provisions can only be understood in the context of wider legislation. In this chapter I describe some relevant international agreements and Italian laws about GMOs, focusing on the fundamental assumptions behind regulation of food biotechnologies. Before I commence this lengthy and possibly boring description, I want to clarify its function in the context of a work on discourses over food biotechnologies. By providing the reader with information about the current legislation on biotechnologies in Italy and Europe,I wish to make clear the tension between European and Italian approaches to food biotechnologies. I offer a glimpse of the constitutive character that legislation has in the context of food biotechnologies. Legislation and agreements are one particular discourse on GMOs; they are inspired by influential ideologies and offer a normative, legally binding representation of GMOs. Besides, the law not only characterizes GMOs but also qualifies and assigns roles to various figures. In particular, legislation specifies how the public should be made aware of biotechnologies, and how it should participate in decisions that could have long term effects on health and the environment. The provisions of the law to provide public participation are of special interest for my discussion in the following chapters. An ethnographic study of a field trial in Italy illustrates how legal requirements of public participation are put into practice in the Italian context and shows how, in the concrete case of one field trial, the discourses of science, the law, and of local citizens clash. We here confront intertextuality and heteroglossia: arguments from different domains collide, merge, and ultimately cross fertilize within communicative settings. The legal discourse, developed at the international, European and Italian levels, has its own logic, its own core values, and it is expressed in a specific and often esoteric jargon. It has its own repertoire of words and expressions and a very limited circulation in society in its original form; in other words, it has its own *ecology*, its limited and mostly inaccessible environment. Core values

and concepts, like for example the 'precautionary principle', are born and developed in influential international settings by experts of science and of public governance. However, fragments, splinters of such discourse penetrate wider circles in society and over time become common currency. They are known in wider areas of society and become part of the arsenal of words, and consequential of concepts, used to manipulate the GMO issue. Fragments of this legalese might then be chewed up and reused in different ways for the purpose of a conversation, to make an argument, to prove a point. One can see, in the speech of the citizens of a little Italian village, and in newspaper articles, the shadow of legal and otherwise authoritative discourses, but retailored and reconstructed for the purposes of the communicative action at hand. Legal provisions governing GMOs are important also because they show how representations of food biotechnologies are related to the issue of citizens' rights.

4.6 The White Paper on European Governance

The White Paper (in Italian *Libro bianco*) is a programmatic document issued by the Commission in 2001; it addresses a crisis in European governance and suggests the principles for its improvement. The paper contains a set of recommendations on how to enhance democracy in Europe and to increase the legitimacy of political institutions. The paper starts with an assessment of the relationship between citizens and European Institutions in the Union and sets out reasons why European governance needs to be reformed. It says, plainly, that "people increasingly distrust institutions and politics or are simply not interested in them". (White paper on European Governance: 3). Disaffection and lack of involvement on the part of citizens have multiple reasons, among them "a perceived inability of the Union to act effectively where a clear case exists", as for example with "food safety scares" (Ibidem:7). It is not by chance that food scares are mentioned in

this programmatic document. The BSE (so called "mad cow disease") crisis was at its peak in that period, and it is then that food biotechnologies came to be considered an integral part of the "food scares" (Charles, 2001).
The White Paper sets out five principles of good governance for EU, national, and local institutions:

> **Openness**. The Institutions should work in a more open manner. (Omissis) They should use language that is accessible and understandable for the general public. (Omissis)
>
> **Participation**. The quality, relevance and effectiveness of EU policies depend on ensuring wide participation throughout the policy chain – from conception to implementation. Improved participation is likely to create more confidence in the end result and in the Institutions which deliver policies. Participation crucially depends on central governments following an inclusive approach when developing and implementing EU policies.
>
> **Accountability.** Roles in the legislative and executive processes need to be clearer. (Omissis)
>
> **Effectiveness**. Policies must be effective and timely, (Omissis). Effectiveness also depends on implementing EU policies in a proportionate manner and on taking decisions at the most appropriate level.
>
> **Coherence**. Policies and action must be coherent and easily understood. (Omissis)
>
> *(White paper on European Governance: 10)*

These principles are proposed for all European institutions to inform the way governance is carried out in the whole Union. Not only EU institutions, but also central governments are called upon. The accent is on participation and transparency which are assumed to inspire trust in the citizen. This particular legislative discourse takes for granted that

involvement and participation generate better governance and increase support for institutions, the latter a proposition which has been questioned in political studies (Abels, 2002).

4.7 Biotechnologies as progress

European legislation on biotechnologies faces a challenge: putting into practice principles of inclusion and participation in government, while coping with fast paced, competitive technological development which has both great risks and great potential. The Lisbon strategy[2] that the EU follows adopts as a premise that long term positive effects will derive from the developments in the life sciences--effects beneficial for the economy, the environment and for society in general. In a 2001 Communication from the Commission this is clearly expressed:

> Many commentators believe that life sciences and biotechnology following Information Technology, will be the basis for the next wave of knowledge-based economies with huge potential for improving the quality of life through the creation of highly skilled jobs, improved competitiveness and economic growth in Europe, better healthcare and new tools to address the different challenges such as protection of the environment.
>
> *(Towards a Strategic Vision of Life Sciences and Biotechnology: 5)*

and also:

> Life sciences and biotechnology have entered a stage of exponential growth, opening up a vast potential to move economies in Europe and globally towards more sustainable development and improved quality of life. They are therefore of strategic importance in Europe's quest to

[2] *Action and development plan for the EU set out in March 2000 by the European Council in Lisbon.*

> become a leading knowledge-based economy. Europe cannot afford to miss the opportunity that these new sciences and technologies offer.
>
> *(Towards a Strategic Vision of Life and Biotechnology: 3)*

Legislation on biotechnologies is the result of negotiations between different agendas and principles. As will become clearer in the rest of the chapter, the EU has incorporated novel foods coming from GM technology into its legislation and is cautiously regulating the commercialization and farming of genetically modified crops. Italian institutions on the other hand are resisting the diffusion of food biotechnologies even when this clashes with European policies and legal provisions.

4.8 The Precautionary Principle and the rights of the public

Biotechnologies are universally considered to be potentially dangerous, and the EU has adopted the so called "precautionary principle" for handling them. The principle was first enunciated in the context of international agreements on environmental development.

4.8.1 The Rio de Janeiro Declaration

The "precautionary principle" originates in the 15th principle of the Rio de Janeiro Declaration on Environment and Development, adopted in 1992, which states that:

> In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.
>
> *(Rio de Janeiro Declaration on Environment and Development, Principle 15)*

In the context of the international agreement the "precautionary approach" is an appeal to policy makers to make wise use of resources for preventing environmental damage. Because technological developments always imply uncertainties and lack of knowledge, such unavoidable lack of knowledge should not be used as an excuse to take risks that can be prevented with cost-effective measures. In the Italian legislation, reference is made to the principle in several instances. (See the paragraphs below) Appeals to the principle are common currency in discussions on food biotechnologies. The precautionary principle is a rhetorical tool, usually invoked to argue for a ban or moratorium on GMOs (see Amato Decree, 2000).

4.8.2 The Cartagena Protocol

The Caratgena Protocol on Biosafety, another international agreement negotiated in Cartagena the 29th of January 2000, has been so far ratified by 125 countries and inspires EU legislation on biotechnologies. The Protocol refers to the 15th principle of the Rio Convention:

> Article 1. Objective
>
> In accordance with the precautionary approach contained in Principle 15 of the Rio Declaration on Environment and Development, the objective of this Protocol is to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on trans-boundary movements.

The Cartagena Protocol is also concerned with the role of the public in the context of biosafety and calls for an increase in public awareness, knowledge, and participation. This aspect as well has inspired EU legislation on biotechnologies.

Article 23. Public Awareness and Participation

The Parties shall:(a) Promote and facilitate public awareness, education and participation concerning the safe transfer, handling and use of living modified organisms in relation to the conservation and sustainable use of biological diversity, taking also into account risks to human health. In doing so, the Parties shall cooperate, as appropriate, with other States and international bodies; (b) Endeavour to ensure that public awareness and education encompass access to information on living modified organisms identified in accordance with this Protocol that may be imported.

2. The Parties shall, in accordance with their respective laws and regulations, consult the public in the decision-making process regarding living modified organisms and shall make the results of such decisions available to the public, while respecting confidential information in accordance with Article 21.

4.8.3 The Aarhus Convention

Another international document important for understanding the discourse of International legislation on food biotechnologies and in turn Italian legislation and practice is the 1998 "Aarhus convention on access to information, public participation and access to justice in environmental matters". The Convention recognizes "the concern of the public about the deliberate release of genetically modified organisms into the environment and the need for increased transparency and greater public participation in decision-making in this field" (Aarhus convention on access to information, public participation and access to justice in environmental matters 1998.)

The Objective of the Convention is set as follows: "In order to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being, each Party shall guarantee the rights of access to information, public participation in decision-making, and access to justice in

environmental matters in accordance with the provisions of this Convention".(Art.1)

The Convention recognizes that "to be able to assert this right and observe this duty, citizens must have access to information, be entitled to participate in decision-making and have access to justice in environmental matters". Like the white paper on European Governance, the Convention is concerned with the level of participation of citizens in decisions concerning the environment and recognizes that "improved access to information and public participation in decision-making enhance the quality and the implementation of decisions, contribute to public awareness of environmental issues, give the public the opportunity to express its concerns and enable public authorities to take due account of such concerns". The convention recognizes the "desirability of transparency" and the need to make the public aware of environmentally related issues. Finally, article 3 sets the provisions of the Convention that asks all parties to provide practical access to information to the public in seeking justice in environmental matters.

4.9 The White paper on food safety

This programmatic document was issued by the Commission on January 12 2000; it calls for improved legislation about food in the Union, and it is largely concerned with food biotechnologies. The introduction states that

> The European Union's food policy must be built around high food safety standards, which serve to protect, and promote, the health of the consumer. The production and consumption of food is central to any society, and has economic, social and, in many cases, environmental consequences
>
> *(Chapter1).*

The focus is not only on health issues but also on the social and environmental implications of food production and consumption.
The white paper on food safety proposes 84 actions for the improvement of food quality and consumer confidence in food. One of the fundamental provisions of the document is to institute a European Food Authority, an organism *super partes,* with legal existence and personality separate from the current EU institutions, modeled after of the U.S. Food and Drug Administration, whose job is to carry out independent risk assessment and risk communication to citizens, *"so as to maximize its impact on consumer health protection and confidence building"* (Article 39). The Paper puts the accent on the independence of the newly devised authority stating that

> If consumer confidence is to be regained, the Authority will need not only to act independently of outside pressure, but to be accepted as doing so by all parties concerned
>
> *(Art.41, Independence).*

The document presupposes an apparently critical situation, in which confidence has to be regained.
Article 6 of the document calls for legislative action to assess, authorize, and label GMOs and their derivates in food and feed. Art. 50 asks for more transparency in the procedure for authorizing the introduction of GMOs into the market and a revision of EU regulations already in place. Article 76 focuses on novel food and states that *"The Community provisions governing novel food have to be tightened and streamlined"* (Art.76). The article sets the requirement for a new EU Directive on new food regulation and labeling. The white paper requests that additives containing or deriving from GMOs be regulated. In accord with the general policy of the EU, emphasis is put on the need for information to the consumer:

> "consumers have the right to expect information on food quality and constituents that is helpful and clearly presented, so that informed choices can be made."

(Consumer Information).

The European Food Authority was established in 2004. The requirements set by the Commission in 2000 have been fulfilled by EU legislation: Directive 2001/19 and Regulations 1829/2003 and 1830/2003. These two pieces of legislation are discussed in what follows.

4.10 Legislation on field trials and commercial use of food biotechnologies.

4.10.1 Directive 2001/18

Current laws in the EU use national legislation to implement the EU parliament Directive 2001/18/EC on the deliberate release into the environment of genetically modified organisms. The Directive repeals all the previous laws on the subject: Reg. (CE) 257/97, Reg. (CE) 1139/98, Reg. (CE) 49/2000, Reg. (CE) 50/2000 and the EU Directive 90/220. The directive clearly follows in the steps of the two white papers issued by the Commission and endorses the principles enunciated by the international agreements reviewed above. In particular, the precautionary principle is recalled: *(8) The precautionary principle has been taken into account in the drafting of this Directive and must be taken into account when implementing it.*

The term "Public" appears 43 times in the document, mostly in the context of providing for information and public consultation at several steps in the procedure that would bring GMOs into the environment and the food chain, from the crafting of legislation to case-by-case decision making.

> (10) For a comprehensive and transparent legislative framework, it is necessary to ensure that the public is consulted by either the Commission or the Member States during the preparation of measures and that they are informed of the measures taken during the implementation of this Directive.

Article 9 of the directive sets requirements for public consultation on the subject of deliberate release of GMOs. This aspect of the law is significant for issues of citizens' rights in the context of experiments that imply the farming of genetically modified crops.

> *Article 9*
>
> Consultation of and information to the public 1. Member States shall,(omissis) consult the public and, where appropriate, groups on the proposed deliberate release. In doing so, Member States shall lay down arrangements for this consultation, including a reasonable time-period, in order to give the public or groups the opportunity to express an opinion.
>
> 2. Without prejudice to the provisions of Article 25: . Member States shall make available to the public information on all part B releases of GMOs in their territory; . the Commission shall make available to the public the information contained in the system of exchange of information pursuant to Article 11

Following the Directive, (art. 24, "Information to the public" and art. 31, "Exchange of information and reporting") information on all ongoing and planned deliberate releases, the list of authorized GMOs, assessment reports and links to the relevant legislation are now publicly available on *the "Biotechnology and GMOs Information web site of Joint Research Centre, European Commission Directorate General"* (Deliberate releases and placing on the market of genetically modified Organisms, n.d.). Also, the public can file via email comments on planned releases and planned authorization to commercial use and can sign up for a newsletter that gives information on any new application filed with the EU. All information is in English. Member states are required to keep a register of the location of field trials and make them *"known to the public by the public"* (Art.31paragraph 3).

While providing rules for the release of GMOs, the Directive is also concerned with assuring that Member States not set their own rules, thus

potentially disregarding the provisions of the European authorities in favor of national interests.

> Article 22
>
> Free circulation
>
> Without prejudice to Article 23, Member States may not prohibit, restrict or impede the placing on the market of GMOs, as or in products, which comply with the requirements of this Directive.

In Italy safety concerns characterized as applications of the "precautionary principle" have been used to overrule EU decisions and to prevent the commercialization of varieties that have been declared legal. (See below the discussion of the Amato Decree and the Coexistence legislation).

4.10.2 Legislative Decree 224/2003

The 2001/18 Directive was implemented in Italy with the Legislative Decree 224/2003, dated 8th July 2003; it substitutes for the previous Legislative Decree 92/1993 which implemented the EU Directive 1990/220. The law regulates the deliberate release of GMOs for research purposes and the introduction of GMOs and their derivates into the Italian market.
The first article of the law

> "establishes, in accordance with the precautionary principle, measures aimed at protecting human and animal health and the environment in respect to the release of genetically modified organisms in the environment (hereafter GMOs)"

Clearly, the focus of concern for the legislators is safety; GMOs are assumed by law to threaten human, animal and environmental welfare. An appeal is made to the "precautionary principle". With an interesting meaning shift, what was "precautionary approach" in the Rio de Janeiro

convention has become a "principle" here. The rhetorical power of appeals to the precautionary principle is evident in almost any discussion concerned with GMOs. The "principle" is one of the many expressions always referred to but seldom clarified; it has produced a large corpus of articles in the international and national press and it has also has received attention for the scientific and economic consequences of its application (Holme & Harris, 1999; Snidico, 2005.)

The decree establishes the Environmental Ministry as the responsible agency to authorize experiments and to coordinate relevant activities of other Ministries involved in the decision-making process. The criteria for issuing authorizations include fulfilling the following requirements:

> (Article 2/a) To verify that opinions from the competent Commissions for releasing GMOs in the environment for research and commercial purposes conform to the requirements of the present Decree
>
> 2/b The assessment of possible effects on human health and on the environment with particular attention to natural ecosystems
>
> 2/c The compatibility of the deliberate release in the environment of GMOs with the requirement of safeguarding agricultural biodiversity of farming systems and of the food chain, with particular attention to typical, organic and high quality products.

Again, the accent is on safety and on safeguarding Italian food products, a constant concern for legislators in the country.

In accordance with requirements of the EU Directive, the law also provides for public consultation, defined as

> the possibility provided for anyone, person, insitution, association, to formulate observations or provide information in respect to any proposed release of GMOs.
>
> *(LD 114/2003 art. 9)*

As noted above, public participation via disseminating information and consulting is of great concern. EU legislators see it as one of the ingredients of good governance, fundamental for *restoring* trust (notice

how lack of trust is presupposed by the White Paper) in institutions and increasing democracy. In the context of this study, entitlements to information and participation in respect to the GMO issue have turned out to be key elements in many representations of food biotechnologies. One of the features often attributed to GMOs is that they are imposed on us, that people are not given a chance to express their opinion on the issue and are relegated to the passive, receiving end of a non democratic process. This is one of the main concerns that emerge from the empirical data described in chapter 6.

Annex VIII, 1

Annex VIII provides the means for carrying out public consultation. These include posting on the Ministry of Environment web site requests for release (called *notifiche*) and creating a mailing list of interested associations and organizations. The information on the web site, the law says, "is given adequate publicity" (Annex VIII). Anyone, including private citizens, according to the law can ask to be included in the mailing list. Members of the list should receive prompt notice of new requests for release. The public, once notified of a new GMO release application, can file observations and information via email for a period of thirty days from the moment when the new request is filed to the authority. After thirty days the consultation is closed, and contributions from the public are referred back to the competent body, that is the Inter Ministerial Commission for Biotechnology. The law does not specify what the Commission should do with the contributions received and does not prescribe a duty to reply or acknowledge public input. Clearly this is a limited and overly formal sort of "public participation" and "public consultation". Furthermore, the law does not seem to be fulfilled in practice. To date the web site of the Environmental Ministry provides no information on the right of citizens to be included in the list of interested parties, nor does it mention any mailing list. In fact, I can see no easy way for a private citizen to know if such a list even exists. Moreover, it can be argued that publishing information about a forthcoming field trial on a web site does not provide information for citizens living nearby the

experimental field. Even the mayors of cities and villages where experiments with GMOs take place are not notified about the request for authorization. This turned out to be the case in the ethnographic study presented in chapter 6, where in the assessment of local citizens this lack was considered a serious limitation to rights of information, let alone participation in the decision-making process. This field trial was autghorized under the previous national regulation, valid until August 2003, which had no provision for citizen involvement in the decision-making procedure and had even scantier provisions for informing citizens of ongoing field trials. Under the previous legislation, information about field trials appeared in a line on the Health Ministry web site only after the trials had been authorized. However, even under the new and more demanding regulation things don't seem to have changed much, and local citizens are still likely to remain uninformed of experiments in their territory. This is a typical case in which the spirit of legal provisions set at the European level are defeated not so much in national legislation but in the practice of responsible parties. Formal provisions for citizen participation are enacted to fulfill legal requirements, but transparency and inclusion are in fact largely denied. The discourse of the law, calling upon values of public participation, is mostly ignored in Italy in the context of experimental planting of GMOs. Other European countries, in the light of strong controversy caused by food biotechnologies, have instead taken up the challenge of admitting the public to the decision-making process and have included more practical and realistic requirements to assure that the public can express itself. In Germany, for instance, a request for carrying out a field trial must be also published in the local newspaper. The public then can file written comments and expect a reply from the competent authority. (PARADYS Final report to the Commission) In the U.K., one of the countries where the debate surrounding GMOs is very active, the government has carried out extensive public consultations on the subject (GM Nation, n.d.) and under the provisions of "Fields on Trial"--a large scale evaluation project of the government --local meetings must be held in villages where

releases of GMOs are planned. (PARADYS Final report to the Commission)

In Italy it is still the case that the citizens most interested in a release of GM crops, namely the residents of the area where the experiment is planned, are also those most likely to remain uninformed, let alone able to file comments to the relevant authority. While the legal provisions might not be fulfilling the spirit of the EU, since the issuing of the 224/203 LD a recently created watchdog association called "Consiglio per i diritti genetici" ("Council for genetic rights") has taken up the task of monitoring new applications and filing comments to the relevant competent bodies, both inside the country and in the Union. Further, the web site of the association explicitly mentions the rights of citizens to file their contributions. The association takes charge of forwarding them to the relevant authorities. (Consiglio per i Diritti Genetici)

In practice, field trials in Italy are still carried out without the involvement of the public. However, the issue of experiments with GMOs is of limited practical importance in the country. Since the early nineties, more then 300 field trials have taken place in Italy, all under the provisions of the old legislation n.92/1993. Following growing concerns about food biotechnologies the number has decreased to almost zero. Two particular provisions contributed to the almost complete halting of research in Italy: a de facto moratorium on GMOs since spring 1988 (no new authorizations for the commercialization of GMOs were granted until 2004 in the EU) and the Amato Decree of 2000, which I consider further below. In the last 2 years only four requests for permission to carry out a field experiment have been made in Italy, of which three have been granted while one is still undecided. (Ministero dell'Ambiente). Given this shrinking number, filed trials are hardly an object of debate. Much more attention is given in the country to recent EU legislations on GM ingredients that are grown elsewhere but can be legally sold in Italy. They are discussed below. In this case too, issues related to the rights of citizens appear of central importance.

4.11 Traceability and labelling.

4.11.1 EU Regulation N. 1829/2003 and N.1830/2003

These two EU regulations establish the compulsory labeling of GM ingredients in food and animal feed and set provisions for a system for back-tracing the ingredients of food products at all levels of food processing, “from farm to fork”; both are dated 22nd September 2003. They are effective in the 25 Member States without the need for implementation through national legislation. GMOs have been present in the ingredients of many foods for several years in Europe, and a clear legislation on how to regulate their presence was missing. Since the late nineties the inclusion of GMOs in many prepared foods, from soft drinks to canned foods, chips and virtually any prepared food containing soy or corn, have been of increasing concern in Italy (Poppe & Kjærnes, 2003; Ferretti & Magudda, 2004). Until the two regulations, no law was imposed to signal the presence of GMOs in food. Several companies, in Italy like in the rest of Europe, voluntarily chose to exclude any GM ingredient from their products and proudly advertised the fact to consumers with “GM free” stamps; however, those who did not opt to be explicitly “GM free” were under no obligation to provide, alongside the list of the ingredients, the fact that the corn syrup or starch or canola oil included in their products was genetically modified. As a result, consumers could not know if what they were buying and eating contained GMOs. While in the mid nineties this seemed irrelevant, the growing controversy on food biotechnologies made it the more and more a matter of rights for consumers to have the possibility to make a choice. The situation was even less regulated for animal feed. Before the issuing of the two EU regulations, the labeling system was so loose that, according to experts of the sector, animal feed constituted one major underregulated area , for almost anything could end up in the feed (personal communications). Food scandals like the outbreak of “mad cow disease” or the case of chickens fed with dioxin-contaminated feed greatly contributed to the loss of trust in food institutions--a main concern of the White paper on food safety. The presence of GMOs in

feed simply cannot be avoided. The EU, and Italy in particular, are not self sufficient and a large percentage of the feed consumed every year is imported from the U.S. and Canada. Usually the feed is composed in large part of corn and soy, and both crops in North America are now largely composed of genetically modified varieties (Global area of biotech crops 1996-2004, n.d.). For this reason, almost all cattle consumed in the EU in the last ten years has been fed with some percentage of GMOs.

These two pieces of regulation were much awaited in the EU, for they are meant to give legal provisions for the right of citizens to choose between GMOs and non GMOs, and they also create a system for tracing back food products at any step of the food chain so that accountability and transparency are increased.

Paragraph 17 of the introduction of regulation 1829 states that:

> the Community is to contribute to promoting the right of consumers to information. In addition to other types of information to the public provided for in this Regulation, the labelling of products enables the consumer to make an informed choice and facilitates fairness of transactions between seller and purchaser.

The main changes from the previous regulations are the following:

For the first time the rules on GMOs are applied to both food and animal feed. The regulation institutes a unified detailed procedure for the introduction into the market of food and feed containing GMOs.

Authorized GMOs are listed in the Community Register of GM Food and Feed (Community Register of GM food and feed, 2005). The Register is accessible on line on the web site of the EU and contains information on the transformation of each variety.A unique identifier of authorized products is assigned to each GM product.

The objective of the regulation is to:

> (a) provide the basis for ensuring a high level of protection of human life and health, animal health and welfare, environment and consumer interests in relation to genetically modified food and feed, whilst ensuring the effective functioning of the internal market; (b) lay down

> Community procedures for the authorisation and supervision of genetically modified food and feed; (c) lay down provisions for the labelling of genetically modified food and feed.
>
> *(Chapter 1, Article 1)*

The regulation applies to GMOs for food use, foods containing GMOs, and food produced from or containing ingredients produced from GMOs (Chapter 2, Section1). Article 4 paragraph 1 states that the food in question must not have

> adverse effects on human health, animal health or the environment; mislead the consumer, differ from the food which it is intended to replace to such an extent that its normal consumption would be nutritionally disadvantageous for the consumer.

The GM foods must have been previously authorized for consumption within the EU, and they can be authorized only if they fulfill the requirements set in the first paragraph. (Article 4 Paragraph 4)
Section 2 focuses on labeling. Article 12 applies to

> foods which are to be delivered as such to the final consumer or mass caterers in the Community and which: (a) contain or consist of GMOs; or (b) are produced from or contain ingredients produced from GMOs.
>
> *(Section 2, Article 12)*

Article 13 specifies some additional labeling requirements for foods that are different from their conventional counterpart or that, among other things, might give rise to "ethical or religious concerns". Such notion is clearly very vague and open to argumentation.
The Regulation sets a tolerance of 0.9 percent of authorized GMOs or ingredients derived from GMOs or produced from GMOs, provided that their presence is "adventitious or technically unavoidable".
Chapter Three regulates GM feed and poses the same requirements posed on foods, namely a tolerance of 0.9 percent and evidence that the

presence of GMOs or their derivates is “adventitious or technically unavoidable”.
The Regulation also sets a transitory measure for the presence of GMOs that are *not* authorized in the EU but are commercialized elsewhere and can be found in food and feed. The measure applies to GMOs that are undergoing authorization and that have already been positively assessed for safety. In this case the tolerance is of 0.5 percent, provided that, once again, their presence is “adventitious or technically unavoidable”.

4.11.2 Authorization for introduction into the market

The relevant norms are 2001/18 and 178/2002 for the assessment of risks in the area of food security. The European Food Authority sends its decision to the Commission after assessing the safety of the food product with respect to health and of environmental risks. The Authority also informs the applicant, other Member States and the Public, which can send its comments to the Commission. Eventually, the Commission authorizes the product with a permission that lasts ten years, after which the permission is re examined. Products that had already been authorized under previous legislation can remain on the market, but they have to be flagged so as to be included in the Community Register of GM food and feed. Further, regulation 1829/2003 also can require that a product continue to be monitored after it has been introduced into the market.

4.11.3 Regulation (EC) No 1830/2003

Concerns “the traceability and labelling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms”. The Regulation on paragraph 11 of the premises specifies that

> (11) It is necessary to ensure that consumers are fully and reliably informed about GMOs and the products, foods and feed produced therefrom, so as to allow them to make an informed choice of product.

Article 1

Objectives

This Regulation provides a framework for the traceability of products consisting of or containing genetically modified organisms (GMOs), and food and feed produced from GMOs, with the objectives of facilitating accurate labelling, monitoring the effects on the environment and, where appropriate, on health, and the implementation of the appropriate risk management measures including, if necessary, withdrawal of products.

Article 4 regulates traceability and labelling requirements for products consisting of or containing GMO. It states that at the first stage, when a product consisting of or containing GMOs is placed on the market, concerned persons (i.e., those producing, trading, or using the products in question) shall ensure that the information about the GM products is transmitted in writing to those who receive the product.

Article 5, on traceability requirements for food and feed produced from GMOs requires that operators placing GM or GM derived products on the market also provide all the information about each ingredient produced from GMOs or, when there is no ingredient list, that the product is produced from GMOs. Article 8 of the law specifies how each kind of GMO must be labeled through the use of a unique identifier. The provisions of the two EU regulations show a great concern for the right of both food producers and private consumers to be able to distinguish GM and non GM products, so that they are given the chance to avoid GMOs if they choose to do so. The authorizations granted after the entry into force of Regulation (EC) No 1829/2003 on genetically modified food and feed are entered in the Community Register of GM Food and Feed. The Register provides useful product information such as the name of the authorization holder, the exact scope of the authorization, the designation of the authorized product, links to relevant risk assessments and the date of entry on the EU market. Thereby, the authorizations become accessible and transparent to everybody. Besides, the Community Register of GM Food and Feed contains products which

were lawfully placed on the market in the Community prior to 18 April 2004 and about which the European Commission was notified before 18 October 2004. The notifications received by the European Commission are subject to the verifications and the procedures in application of Article 8 and 20 of Regulation (EC) No 1829/2003. As in September 2007, there are 21 existing products included in the Community Register of GM Food and Feed under Article 8 and 20 of the Regulation (EC) 1829/2003. They include several types of maize, cotton, oilseed rape, and one type of modified soy.

4.12 Italian legislation

Italy has taken a more cautious approach to food biotechnologies than the EU authorities. The resolutions of a succession of Italian governments and the legislation of the parliament show that national institutions are largely disinclined to permit the cultivation of genetically modified crops in Italy. A position against GMOs is largely shared by both the right and the left parties, with the exception of few vociferous outsiders, usually scientists, who take the side of food biotechnologies in both wings of the parliament (Bonazzi, 2005). The ex ministers of Agriculture, Alfonso Pecoraro Scanio [3], and Giovanni Alemanno[4], both have expressed very critical positions toward food biotechnologies and have proposed and acted so as to stop field trial research in the country. The current Minister of Agriculture, Paolo De Castro[5] has expressed a position of "zero tolerance" in the context of allowing a legal level of GM contamination in organic foods (OGM: De Castro, tolleranza zero nel biologico, 2007). Several regions and councils have also issued legislation about food biotechnologies, all in order to ban them from the area of their

[3] *Green Party, minister of Agrticulture in the second Amato government, from April, 25 2000 to June 11, 2001*
[4] *Alleanza Nazionale, minister of Agriculture in the second and third Berlusconi government, from June 11, 2001 to May, 17 2006*
[5] *Once a Liberal, now in the Ulivo coalition, minister of Agriculture since May, 16, 2006, in the second Prodi government.*

jurisdiction. In the following I discuss some resolutions on GMOs that illustrate what can be called *institutional* resistance to GM food in the country institutions.

4.12.1 The Amato Decree

On the 4th of August 2000 Giuliano Amato – Prime Minister at the time - invoked an emergency procedure to suspend the import and sale of four kinds of GM corn: BT-11(Novartis), MON-809, MON-810 (Monsanto) and T25 (Aventis). Derivates of those four kinds of maize are found in a large number of prepared foods, and they are and were at the time legally commercialized in the EU. The decree states that "current scientific knowledge does not recognize risks for human or animal health due to the consumption of such GMOs"; however, somehow contradictorily it also calls upon article 12 of EU Regulation 258/97, a security clause that allows individual countries to suspend the commercialization of products or ingredients if there is new evidence that such products might pose health risks. The suspension was prompted by the green association V.A.S. (acronym for Verdi Ambiente e Società) that filed a legal charge asserting that the four maize species and their derivates had been introduced into the EU market without due testing and safety measures. V.A.S. representatives insisted that not enough evidence had been given that the four types of corn are "substantially equivalent" to the non GM varieties (Decreto del Presidente del Consiglio dei Ministri, August, 4, 2000). "Substantial equivalence" is the required parameter for the introduction of a new variety of vegetable into the market: GM and non GM varieties need to be so similar in their biochemical composition shat they can be considered equivalent. As a matter of fact, the very notion that GMOs could be considered substantially equivalent to conventional varieties is extremely controversial from the perspective of green associations and prompted the filing of the legal report. The Amato Decree was the first occasion on which a EU country had recourse to the safety clause, and that the matter was brought to the attention of the EU Scientific Committee on Food.

Had the decision of the Italian government been judged to be well founded, the suspension on the questioned corn varieities should have been extended to the whole EU. The Scientific Committee on September 2000 reached the following "Conclusion: The Committee is of the opinion that the information provided by the Italian Authorities does not provide detailed scientific grounds for considering that the use of the novel foods in question endangers human health". (Opinion of the Scientific Committee on Food, 2000). The opinion did not induce a change in the Italian position; instead it produced a long standing debate and a court case to have the products reintroduced into the Italian market. Monsanto Agriculture, Novartis Seed Spa (today Syngenta Seeds Spa), Pioneer Hi Breed Italy and Assobiotec filed a petition to have the four products reintroduced into Italy. Eventually, on November, 29, 2004, the Administrative Tribunal of the Lazio region (in Italian T.A.R.) nullified the Amato Decree but denied the suing companies financial compensation for loss of profit. Following the decision, members of the Italian parliament have argued that the Amato Decree "was and is fully justified by the application of the precautionary principle" and that Italy should be entitled to ban the four products. (De Petris, 2004)

4.12.2 The Alemanno memorandum and the declarations of Pecoraro Scanio

On November 15, 2002, the Minister of Agriculture of the Berlusconi government, Giovanni Alemanno issued a memo halting all field trials with genetically modified crops being carried out by research institutes which depended on the ministry of Agriculture. (Meldolesi, 2002) The suspended experiments had been regularly authorized and monitored by the Italian authority. No emergency or new information motivated the resolution. The memorandum of the minister cites no concrete reasons or safety concerns. Scientists running experiments funded and authorized months or years before, mostly in the context of wider international research were outraged. The decision prompted a reaction from scientists in the country and accusations that Alemanno was "against research"

(Meldolesi, 2002). Following public appeals of scientists in national newspapers, the minister issued more restrictive guidelines for regulating field trials across the whole country, tightening the requirements of EU Directive 2001/18. Two years earlier, the previous minister of Agriculture in the first left government in the history of the Republic, Mr Alfonso Pecoraro Scanio, had explicitly stated his intention to stop and ban all field trials in the country (Polacchi, 2000). However no ban was issued at the time.

4.12.3 The Law on coexistence

On July 23rd, 2003 the Commission issued a "Recommendation" stating that each Member State must find ways to guarantee "coexistence" between genetically modified and non genetically modified crops. These are measures to be put in place in order to make less likely that cross breed occur. Such measures include: maintaining distance between GM and non GM crops, creating barriers for pollens, and choosing to cultivate in one area plants that flower in different times of the year. The Commission issues its recommendations strating from the perspective that there are GM crops that can be legally framed over the 25 states.
Italian law N. 5, dated 28 January 2005 turns into a permanent law of the Republic a previous Government Decree, the so called "Coexistence Decree" (Decreto Legislativo n. 279), issued in November 2004, that regulates the terms under which authorized GMOs may be cultivated in Italy. A Government Decree is an urgent temporary law promulgated by the executive branch of the government which is valid for 60 days; a Decree loses its effect if within 60 days, unless it is reissued, the two chambers of the Parliament fail to approve it and thus convert it into a permanent law. "Coexistence" refers to the need to provide principles for the safe commercial cultivation on Italian soil of both GM and non GM crops. A Decree can be modified by amendments of the MPs during the parliamentary procedure necessary to turn it into Law. In this case the parliamentary debate was heated. People both in and outside the Parliament argue that safe coexistence between genetically modified and non genetically modified crops is impossible in Italy. The argument is

supported by studies that show how pollen travels long distances. Given the small average size of farms in Italy and other features of landscape, it is impossible to guarantee that GM and non GM crops would not interbreed. The result would be contamination of non-GM crops and loss and damage for conventional and organic farmers. As a result, the argument goes, the only way to guarantee farmers and consumers GM free crops is to forbid the cultivation of GMOs in the whole country. The position is incompatible with European legislation, which requires that no barriers be posed by an individual country to products that have been approved for commercial use in the Union (art. 22 of the EU2001/18 Directive). The decree defines the normative frame for the co existence between transgenic crops (other than those grown for experimentation) and conventional and organic crops, "with the aim of not compromising biodiversity of the natural environment and to guarantee freedom of economic initiative, the right to choose for the consumer, and the quality and typical features of national food production."(Art.1)

Art.2 focuses on the "protection of the co existence principle" ("Salvaguardia del principio di coesistenza)" The principle states that "different types of crops (transgenic, traditional, organic) must be farmed so that the farming of one type does not compromise the farming of another type of crop". Coexistence must protect "peculiarities and specific producing features" of crops, and must avoid "any form of contact between transgenic and conventional and organic seeds."

Article 2-bis specifies that introducing GM crops must not prejudice preexisting farming practices, and that there must be no necessity to change the character of those practices because of GM crops. Article 3 states that coexistence "must guarantee the right of choice of farmers, other workers along the food chain, and consumers to choose between conventional, organic and transgenic products, and therefore GMOs must be cultivated in a segregated food chain."

The law assigns to the Regions the task of "adopting a plan for coexistence" and this includes devising the technical provisions for realizing it. (Art.4/1) While developing the plan, Regions must consult with organizations, associations and subjects involved (Art.4/2). Regions

can create a monetary fund for the just compensation of possible damages caused by non compliance with the plan for coexistence (4/3bis). Whoever wants to cultivate GMOs must notify the region, elaborate a coexistence plan, and keep a detailed register of the measures adopted (Art.5/3) Regions must collect and retain all the information included in these registers (Art.5/4).
Article 6 focuses on sanctions, and establishes that failure to keep there registers is subject to a fine of 5.000 to 25.000 Euros, while cultivating GMOs before the competent region has issued a Law on coexistence is punishable with imprisonment from one to two years and fines from 5.000 to 50.000 Euros. The most controversial provision of the Law deals with transitional norms. Article 8 in fact states that

> "in order to achieve the aims specified in article 1 (that is ,safe coexistence), until the adoption of the specific legal provisions of article 4 (that is, regional legislation on coexistence) transgenic cultivation, aside from cultivation for research, is not allowed".

No deadline is specified for the regions to devise coexistence plans. Without fixed dates for the regions to provide legal ways to farm authorized GMOs, in Italy GMOs are effectively banned indeterminately. The provision has been called "medieval" by a representative of the Italian Association of Biotech Industries (Assobiotec) and it can be seen as a Machiavellian way of not complying with EU authority. As a result of this law, 13 GM crops which have been judged safe and are legally farmed in the European Union, are illegal in Italy. This piece of legislation can be considered a way the Italian parliament "resists" GMOs, a metaphor used in various forms by many in the debate.

4.12.4 Anti transgenic councils and regions

According to the official web site of the anti transgenic councils, 451 of the over 8100 Italian councils have declared themselves to be "antitransgenici," (Comune Antitransgenico, n.d.) approving resolutions similar to the one I analyize in detail in paragraph 7.1. The web site of the Anti transgenic councils and regions does not seem to be updated.

The last council having been added in April 2004; possibly more councils have declared themselves "antitransgenici" since then. More remarkably, all but 3 of the 20 Italian regional governments have issued legislation against GMOs. Following a governance policy called 'devolution', Italian regions have received more and more fiscal and legislative powers over the last few years in fields such as of education, healthcare and taxes. In some regions GMOs cannot be cultivated and field trials are forbidden (Umbria, Regional Law N.20, 21st August 2001). In others GM foods cannot be served in any publicly owned facility like schools and hospitals (Campania, Law N. 15, 24th November 2001). In the Marche region, producers using food components that are derived from or contain GMOs are excluded from all regional incentives to the food industry. Also, it is forbidden to serve GMOs in any community restaurant depending on or directly owned by the region. (Marche Regional Law N. 5, 3rd March 2004). In other regions still, authorities offer incentives and monetary support to those who commit to GM-free farming practices, in order to discourage the cultivation of GMOs and to promote organic and traditional farming (Trento Province, Law N. 4, 28th March 2003). Similar measures have been adopted by almost all Italian Regions and are evidence of a consistent institutional rejection of food biotechnologies. As I have already pointed out, there is a potential clash between regional and local resolutions on the one hand and national and EU regulations on the other. There are so far thirteen different GMOs which have been judged safe and can be sold and farmed in the EU. Bans at regional level have no legal standing. According to off record remarks of informed parties, it has occurred in the past that experiments were running in "anti transgenic" councils. However, while banning authorized GMOs from the shelves of supermarkets in regions of Italy might run counter to EU legislation, things are different when it comes to cultivating commercial GM crops like corn and soy on Italian soil. The Law on Coexistence appoints "Regional Authorities" for developing agricultural plans that would guarantee the safe coexistence between GM crops and non GM corps. Regions must find a way to guarantee coexistence on the basis of their own specific landscape

features. Some regions might argue that given the nature of their territory and the extreme fragmentations of agricultural parcels, no coexistence with GMOs is possible if the rights of organic and traditional farmers are to be guaranteed. As a result, regions could legally argue for the exclusion of GM crops from their territories. The argument that no coexistence with GMOs is safely possible in Italy because of landscape features and because of the average small size of land lots has been made vociferously and has stirred the debate over the decree. (Approvato il decreto sugli OGM, n.d.) Given the laws against GMOs already issued by all but three Italian regions it is likely that many regional governments will propose coexistence plans so restrictive, so onerous for farmers who might want to grow transgenic plants, that GM crops will be de facto banned from Italy for a long time. This regional approach, plus a market strongly adverse to GMOs, will probably be even more effective in keeping GMOs out of Italy than legislations interdicting them. According to EU law in fact, the banning of authorized GMOs must be justified on scientific grounds, for otherwise it contravenes article 22 of the 2001/18 Directive that requires free circulation of authorized GMOs. There is already a precedent. On the 5th of October 2005 the EU Court ruled that Austria had no grounds to ban the cultivation of legal GMOs on its territory. In 2003 Austria had presented to the Court a draft law arguing that, due to its landscape, GMOs could not coexist safely with other crops. The draft law was supported by a scientific report on how to realize GM free areas of farming in Austria; the report concluded that only the exclusion of GMOs would conform to the precautionary principle. Nevertheless, the EU Court ruled that Austria had failed to show that the measure was scientifically justified. It further ruled that a deviation from EU law was not warranted in this case, and that the arguments used to invoke the precautionary principle lacked substance. The Austrian actions were dismissed in their entirety. (EU Court overturns Austrian law to ban GM, October 2005). Even if antitransgenic councils and regions do not succeed in overruling regulation of a higher authority, the declarations can have an effect on people's perception of food biotechnology. In turn, this influences the

disposition of those operating along the food chain, from seed dealers to farmers to food stores chains. Since 1999 COOP, the major food chain and distributor in Italy, with over 6 million members, has banned GM products from foods bearing its in-house label. (Masciaga, personal communication). Many others in the food industry have done the same, in Italy and all over Europe, while Greenpeace Italy keeps a public register for naming and shaming food companies that make use of GMOs in their products.(Alimenti OGM non nel mio carrello!.n.d.) On the roads entering each one of the over 400 anti transgenic Italian councils the one sign announcing the name of the city or of the village is supplemented by another that reads "comune antitransgenico". Such a public declaration of aversion to GMOs might have little legal weight, but it can certainly have impact on how people conceive of GMOs. In the past, many Italian Councils led a campaign against nuclear power using the same strategy. A permanent sign was posted under the city name that read "comune denuclearizzato" a neologism, loosely translatable as "Council clear of nuclear power". No doubt the anti nuclear power strategy has inspired the "antitransgenico" campaign. In that case too, the legal authority of the Council was dubious because decisions about nuclear power plants are the province of the central government. Nonetheless, the strategy represented a permanent and public statement against a controversial technology by local authorities.

4.13 Conclusions

In this chapter I have illustrated the legislation relevant to experiments and commercialization of GM foods at European and National level. By describing the key concepts that guide international agreements, EU Directives and Italian provisions, I have wanted to introduce some of the main buzzwords which resound in the discourses over food biotechnologies in Italy. "Public participation", "risk assessment", "precautionary principle", "unforeseeable risks", "coexistence" are all words that circulate in society but come from

specific and esoteric legalese. These words are then re appropriate in more informal contexts by lay persons and once re-energised become a vital aspect of public discourse that eventually enters the sphere of legislative decision-making. Furthermore, my discussion of the existing tension between on the one hand the legal provisions at European level and the other hand the ones of Italian governments, which resist the cultivation of GM crops despite binding EU decision, will become particularly relevant as the background for the textual analysis of the first local declaration of rejection of biotechnologies issued by an Italian council.

5 THEORETICAL COORDINATES

In this chapter I give an account of different works which have theoretical influence on my study. I describe the main arguments and illustrate criticisms of the main theories I present. A central aspect of my own reflection is the role communicative action has in the study. I summarize how I conceive of the communicative processes in which representations of GMOs are constructed and the principles on which I base the empirical analysis.

5.1 Introduction

This work is concerned with discourses about food biotechnologies. In the media and in everyday conversations we find verbal depictions, representations of biotechnologies. Because this is a study in social psychology, the psychological status of these depictions is of central importance. In this chapter I will engage with the following questions: What is the nature of the discourses analyzed? Are discourses anything besides articulated utterances, voices that circulate within society, in the mouths of people and on the printed pages of magazines? Are discourses linked to mental representations, aspects of which are shared by segments of society? Above all, what is the relationship, perhaps problematic, between such mental representations and what is expressed in discourse? I will try to illustrate the issues behind such dilemmas and carve out a tenable stance in relation to other existing theoretical positions. The theoretical frame of my work relies on two different approaches, and I argue for the productivity of a reasoned syncretism between them. However, important differences which separate these approaches at theoretical and methodological levels must first be addressed. Social Representations Theory (Moscovici, 1976) and Discursive Psychology (Potter & Wetherell, 1987) both assume that thought and discourse are social in nature. However, they provide different perspectives on central

questions. According to SRT, discourses of biotechnologies correspond to the voicing of socially shared representations of the phenomenon: they have a cognitive status and an essentially mental nature. Like other cognate socio-psychological concepts - for example attitudes, schemata, beliefs - Social Representations function as guiding principles in the understanding of a phenomenon. From this perspective discourses constitute an epiphenomenon, the symptom or contingent expression of mental states, and they reveal that interlocutors share a given representation. Within SRT, the answer to the question "why do people say what they say about GMOs?" is "because that's what they think". As we will see at length, exponents of Discursive Psychology (DP) criticize this simple explanation and the theoretical assumptions on which it is based from a programmatically anti-cognitive perspective. Within DP the sense-making role of representations is not excluded in principle (Potter & Edwards, 1999: 448) but it is *de facto* put to one side; it is not an object of enquiry. Discursive psychologists emphasize the strategic, contingent, action-oriented nature of representations, while "what people think" is not an object of attention. Representations from the DP perspective are moves in a social game; they are the means for participants in a conversation to substantiate a certain version of facts, to attribute or deny responsibility, to deflect blame and overall to maintain a strategically sound attitude given the social task one is engaged in. In short: for SRT, discourse is an expression of mental states and social representations; for DP discourse is a tool of strategic action with no presumed relation to beliefs.I will start with the most important theoretical roots and principles of both approaches, and I will move on to the criticisms launched against the approaches. Throughout I shall try to make clear what this work owes to both frameworks.

5.2 The Theory of Social Representations

Social Representations Theory developed in France based on the works of Serge Moscovici (Moscovici, 1976; 1981; 1984b; 1988, 2001)

and is often regarded as a continental alternative to Anglo-Saxon social psychology. The theory emerged as a reaction to individualistic social psychology (Augoustinos & Walker, 1995). Perhaps one of the reasons for the success of Moscovici's theory lies in the emphasis it places on representations as supra-individual phenomena; the unit of analysis of SR studies is not the individual but the group or social milieu which shares a given social representation. Moscovici described Social Representations as "social entities, with a life of their own, communicating between themselves, opposing each other and changing in harmony with the course of life; vanishing, only to emerge under new guises" (Moscovici 1984b:10). Studies of Social Representations focus on the onset and transformations of the representations of a given social phenomenon within a group; the vocation of the theory is to study how different segments of modern societies receive and understand or "popularize" new and/or otherwise unsettling phenomena, like techno-scientific developments, scientific theories, or dramatic events such as the spreading of a disease. Publications within the approach have focused on social representations of psychoanalysis, Marxism, madness, nuclear power, human rights, food, HIV and biotechnologies (for a comprehensive review see Wagner & Others., 1999; Wagner & Hayes, 2005). A look at the programs of the 2004 and 2006 International Conferences on Social Representations shows that the theory continues to inspire an array of studies on a vast class of topics: fashion, gender, music, the body, driving, the Internet, animals, the Euro currency, Europe and European cities, to cite just a few.

5.3 What are Social Representations?

Defining the object of study is always a theoretical challenge. The 'object' within Social Representations Theory has inspired many criticisms (e.g. Jahoda, 1988). The name of the theory clearly implies, via a presupposition of existence, that there *are* such "things" as SRs distinguished from cognate entities. However a clear-cut characterization

of SRs has proven problematic. Briefly put, SRs amount to *social knowledge;* they are the stock of understanding people share in the form of common sense theories about the world. They correspond to 'a system of values, ideas and practices.' (Moscovici 1973: xiii). In the words of Moscovici,

> Social Representations concern the contents of everyday thinking and the stock of ideas that gives coherence to our religious beliefs, political ideas and the connections we create as spontaneously as we breathe. They make it possible for us to classify persons and objects, to compare and explain behaviors and to objectify them as parts of our social setting. While representations are often to be located in the minds of men and women, they can just as often be found 'in the world', and as such examined separately.
>
> *(Moscovici, 1988: 214)*

SRs are both conventional and prescriptive; they make up an environment in which we are submerged so that nothing we come across can be interpreted without recurring to these pre-formed schemas (Moscovici, 1984b). Moscovici asserts that: "(…) we are never provided with any information which has not been distorted by representations 'superimposed' on objects and on persons" (Moscovici, 1984b:5). Social Representations thus affect the way we think. Moscovici characterizes representations as something akin to 'culture' when he writes that:

> (…) it is easy to see why the representation which we have of something is not directly related to our manner of thinking but, conversely, why our manner of thinking, and what we think, depend on such representations, that is on the fact that we have, or have not, a given representation. I mean that they are forced upon us, transmitted, and are the product of a whole sequence of elaboration and of changes which occur in the course of time, and are the achievements of successive generations.
>
> *(Moscovici 1984b: 10)*

And also: “The weight of their [SRs] history, custom and cumulative content confronts us with all the resistance of a material object. Perhaps it is even greater, since what is invisible is inevitably harder to overcome than what is visible.” (Moscovici 1984b:12) These standpoints appear consistent with the epistemology of social constructionism (Berger and Luckman, 1966).The core idea is that we inhabit a socially generated world and that the only criteria at our disposal for making judgments are those we develop within such an already constructed universe, so that there is nothing accessible to us beyond it.[6] Social Representations theory appears to be inspired by anthropology as much as by sociology. Most influential on Moscovici’s concept of ‘social representations’ is Durkheim’s notion of ‘collective representations’ (Durkheim, 1972). Durkheim uses the term to differentiate between individual and collective thought. Collective representations are those widely shared by members of society; they originate in society and are *about* society. Durkheim’s collective representations cannot be explained at the level of the individual and are independent from the individuals who express them; they must be explained at a social level. While collective representations are found in so called “traditional” societies, characterized by the weight of tradition, limited mobility, and few external excursions (when compared with urban aggregates), according to Moscovici Social Representations are the characteristic feature of fast paced, novelty-stricken, media-submerged modern societies. Social psychology should study social thinking by becoming “an anthropological and an historical science” (Moscovici, 1984b) focusing on how certain social representations come into existence and are transformed at given moments in time in certain areas of society.

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[6] *However, Gergen, (1982) accused SRT of positivism. See the discussion over the notions of consensual and reified universes in the following paragraphs.*

5.4 Function of Social Representations

Among the all-encompassing forces of social reality on our minds, SRs are postulated to have a specific cognitive purpose. SRs

> conventionalise the objects, persons and events we encounter. They give them a definite form, locate them in a given category and gradually establish them as a model of a certain type, distinct and shared by a group of people. All new elements adhere to this model and merge into it.
>
> *(Moscovici 1984b:7)*

If conventionalization were the only defining characteristic of SRs it would be difficult to distinguish Social Representations from any mental schemata. Moscovici explicitly addresses the need to qualify SRs unambiguously (Moscovici, 1984b) as designated for a specific kind of conventionalization, the familiarization of what is unfamiliar:
"The purpose of all representations is to make something unfamiliar, or unfamiliarity itself, familiar. [Emphasis in the original] (Moscovici, 1984b:24.) This specific character of Social Representations also clarifies why the vocation of the theory is to study phenomena that have some degree of distance or novelty.

> The act of re-presentation is a means of transferring what disturbs us, what threatens our universe, from the outside to the inside, from far off to near by. The transfer is effected by separating normally linked concepts and perceptions and setting them in a context where the unusual becomes usual, where the unknown can be included in an acknowledged category
>
> *(Moscovici, 1984b:26)*

The focus of SRT fits well with the study of the public reception of food biotechnologies. While biotechnologies and their products have existed since the 1980s, for most Italians GMOs are a new and suspect phenomenon, the technicalities and geopolitics of which are not effortless

to grasp. It is not easy for a lay person to gain first hand knowledge about GM foods; inevitably previous beliefs and currently available representations play an important part in how Italians are making up their minds about biotechnologies.

5.5 Anchoring and Objectification

Disrupting, threatening and unfamiliar events in the life of a group must be coped with in symbolic terms. This coping process is what generates social representations (Moscovici, 1976) SRs are formed via two cognitive processes, anchoring and objectification (Moscovici, 1976). Anchoring implies relating the new phenomenon to others already known - events from the past - so that current words and images can be used to categorize the unknown. Objectification implies the uses of metaphors and vivid images to make concrete something distant and abstract. Moscovici illustrates this process with a compelling example:

> (…) to objectify is to discover the iconic quality of an imprecise idea or being, to reproduce a concept in an image. To compare is already to picture, to fill what is naturally empty with substance. We have only to compare God with a father and what was invisible instantly becomes visible in our minds as a person to whom we can respond as such.
>
> *(Moscovici, 1984b: 38)*

Social representations thus have figurative or metaphorical character. In my research participants often used metaphors from unrelated semantic fields while describing GMOs. They also associated GMOs with other more familiar items in order to make a point. One participant stated that "GMOs are like drugs" and further developed his thought saying that just like drugs, when you start using them you cannot stop: that you are enslaved to drugs and to those who produce them. Another person referred to the 1984 disaster of Bhopal, India, when a chemical plant released toxic fumes that killed and maimed thousands, to sketch a dystopian scenario of the consequences of biotechnologies. Still another

person referred to the tragic consequence for fetuses of the drug Thalidomide in the 1960s in order to warn against the unforeseeable consequences of GM foods. Another participant used the metaphor of alphabets, letters, and words comparing them to the DNA sequence. He argued that in nature, just like in a word and in a sentence, if you change the order of elements things go wrong. On the other hand, scientists often associate the process of obtaining GMOs to traditional breeding of plants and animal through selection. All these images according to SRT are ways to apprehend, to gain familiarity with a rather abstract and out-of-reach phenomenon, and to make it tractable. The process involves anchoring the new object to past experiences and making it tangible through metaphors and allegories. The core idea of SRT is that when faced with the unknown lay people develop creative ways to think and talk about scientific facts too complex and too abstract to grasp.

5.6 The thinking society

SRs are conventional and prescriptive (Moscovici, 1984b). However in the writings of Moscovici they are not simply the result of powerful external forces. SRs impose themselves on modern society via mass media (Moscovici, 1976), but at the same time they are the product of bottom-up creative activity on the part of society. SRs are born and change within everyday informal discourse:

> So what we are suggesting is that individuals and groups, far from being passive receptors, think for themselves, produce and ceaselessly communicate their own specific representations and solutions to the questions they set themselves. In the streets, in cafes, offices, hospitals, laboratories, etc., people analyse, comment, concoct spontaneous, unofficial, 'philosophies' which have a decisive impact in their social relations, their choices, the way they bring up their children, plan ahead and so forth. Events, sciences and ideologies simply provide them with 'food for thought'
>
> *(Moscovici, 1984b:16).*

Notably, Moscovici criticizes top-down views about the power of ideologies on society. He writes that these approaches are

> maintaining that groups and individuals are always and completely under the sway of a dominant ideology which is produced and imposed by their social class, the State the Church or the school, and that what they think and say only reflects such an ideology. In other words it is maintained that they don't as a rule think or produce anything original, on their own: they reproduce and in turn are reproduced.
>
> *(Moscovici, 1984b p.15)*

There is here a potential contradiction. According to Moscovici we are to assume both that people are free agents and make up their mind about emerging phenomena, but also that they are constantly confronted with the weight and power of their group-specific epistemic legacy so that they depend on previous, group-based social representations to form new social representations. This ambiguous aspect of the theory points to a central struggle in social psychology between individual free agency on one hand and the all-encompassing social constraints of group and culture on the other.

5.7 Social Knowledge and memory: F.C. Bartlett

SRT rests on the proposition that people cannot avoid applying their pre existing knowledge to understand phenomena. This assertion is not new, nor is the claim that much of what individuals use for making sense of reality is social in origin and largely shared within a given community. Evidence of the impact of social factors on cognitive processes comes from early studies on memory. F. C. Bartlett (1932/1995) in his seminal studies used evidence from recollections of stories, drawings and ink stains to develop the first theory of memory as a process of construction rather than "recollection." In a famous experiment, he asked subjects to read the "War of the ghosts", a North American Indian narrative

collected and translated by Franz Boas. The story contains odd elements which do not fit in the semiotics of a typical western narrative. When repeatedly asked to reproduce the text at different intervals of time, ranging from a few hours to several years, subjects provided an increasingly altered version of the story. Some of the alterations were interpretations and remarkable insertions of elements alien to the story and notably derivative of the cultural background of the subjects. The stories as recollected and retold were transformed by simplifications and conventionalization obviously influenced by the beliefs and social practices of the subjects. Bartlett notes that while his experiments focused on individuals, the results showed how social reality mediates the epistemic relationship between interpreter and text. The conclusion is that the processes influencing memory in an experimental setting are also in place in everyday life and affect our mundane recollection and interpretation of events:

> The form which a rumor, or a story, or a decorative design, finally assumes within a given social group is the work of many different successive social reactions. Elements of culture, or cultural complexes, pass from person to person within a group, or from group to group, and, eventually reaching a thoroughly conventionalized form, may take an established place in the general mass of culture possessed by a specific group. Whether we deal with an institution, a mode of conduct, a story, or an art form, the conventionalized product varies from group to group, so that it may come to be the very characteristic we use when we wish most sharply to differentiate one social group from another.
>
> *(Bartlett, 1995: 118)*

The connection between Bartlett's findings and the principles of Social Representation theory has been traced before (Jahoda, 1988). Bartlett and Moscovici both focus on the conventionalization implied in understanding and retaining unfamiliar information. Both argue that shared conventions are defining features of a social group.

5.8 Principles generating standpoints: Social Representations as Ideologies

In this paragraph I discuss the notion of ideology, a key concept for the whole argument of my work. According to the theory, Social Representations are located in individual minds and in the world, embodied in discourse and in all forms of communicative artifacts. As cognitive elements SRs have a mediating effect between a stimulus and the response it prompts. As discourses they constitute an environment in which social members are immersed. Like prejudice, ideologies and mental schemata, representations influence the way we perceive the world. Critics of the theory have pointed out that it is hard to distinguish SRs from these other key notions (Jahoda, 1988). Like ideologies, SRs are not simply a series of unrelated beliefs; they make up a whole structure, a worldview. Representations are networked and anchored in several ways: anchored to their holders, their values and wider beliefs, anchored to the social class which expresses representations, and finally anchored to the specific position occupied by a certain social actor in respect to a particular issue (Doise, 1992). Moscovici is famous for programmatically resisting clear-cut definitions of the concept of Social Representations, on the ground that simple propositions could not describe appropriately such a complex series of concepts (Moscovici & Marková, 1998). However, other exponents of the theory have offered definitions. I report here the classic formulation of Doise, because it is clear, and because it guides my own use of the notion of social representations. As will be obvious, this definition emphasizes certain aspects of the theory while it leaves others behind. Doise starts with a quotation from Bourdieu, who in his work on the production of beliefs wrote:

> on n'achète pas un journal mais un principe gènèrateur de prises de position dèfini par une certain position distinctive dans un champ de principes gènèrateurs institutionalisès de prises de position
>
> *(Bourdieu 1977: 15 as quoted in Doise, 1986: 82)*

> [(When you buy a newspaper), you don't buy a newspaper but a principle generating viewpoints. This generating principle is characterized by a certain distinct position within a field of institutionalized principles which themselves generate viewpoints].

Newspapers, very much like social representations, offer a whole perspective, a particular vantage point from which to look at facts and make assessments. Bourdieu also explains what produces such *prises de position.* Belonging to a certain social class or the professional relationship with a certain topic has great impact on how individuals and groups interpret the world and come to terms with new phenomena.

> l'on peut poser qu'un acteur se sentira d'autant plus complètement et adéquatement exprimé que l'omologie sera plus parfaite entre la position de son journal dans le champ des organes de presse et la position qui'il occupe lui-même das le champ des classes (ou fractions de classe), fondament générateur de ses opinions.
>
> *(Bourdieu 1977: 15 as quoted in Doise, 1986: 82)*

> [One can hypothesize that an actor will feel that he has been expressed the more entirely and adequately the more perfect is the level of homology between the position of his newspaper within the field of printed media and the position that he himself occupies within the field of social classes (or fractions of classes), which is the fundamental element generating his opinions.]

Following Bourdieu, Doise offers the following definition:

> les reprèsentations sociales sont del principles gènèrateurs de prises de position liée à des insertions spècifiques dans un ensemble de rapports socioux et organisant les processus symboliques intervenant dan ces rapports.
>
> *(Doise 1986: 85)*

> [Social representations are principles generating standpoints; they are linked to specific intersections within a group of social relations. They organize the symbolic processes which operate inside those social relations]

The symbolic process is what moves from a sign to what the sign stands for. Social Representations organize this process, affecting the way in which we interpret images and facts. This definition is coherent with Moscovici's insistence on the effect of SRs on how we think. However, unlike Moscovici, Doise makes no mention of the familiarizing function of SRs. Doise's definition puts the notion of Social Representations close to the notion of ideology understood as a body of structured beliefs which guide an individual or a group. Some scholars within the paradigm of Social Representations theory explicitly fuse the two concepts. Wagner and Hayes for instance write that "it appears that one can subsume the essential features of ideologies for social-psychological purposes under the concept of 'social representation' (Wagner & Hayes, 2005: 53). Conversely, within the area of Discourse Analysis, van Dijk (1999) makes use of the notion of social representations as a synonym of ideology, and he elects the latter term over the former. Like ideologies, Social Representations are socially shared cognitive structures; I shall use the two terms as synonyms. The notion of Social Representations has advantages over that of ideology. 'Ideology' is a broad notion and resonates with different scholarly traditions. 'Ideology' in the Marxian tradition implies a biased, distorted perspective, and implicitly assumes the existence of a non prejudiced, *scientific* or more *authentic* perspective (Eagleton, 1991). If there is an "ideological" version of facts, one implicitly assumes that there can be a realistic one. I do not share this view. As Wetherell and Potter put it:

> Our account of objects always construct those objects in certain ways and this construction is inescapable. Some versions of reality may be infinitely preferable to others, and should be argued for and pushed forward whenever possible, but, in our view, there is no 'versionless' reality.

(Wetherell & Potter, 1992: 62)

However, *constructed* is not the same as *ideological*; the two concepts must be kept distinguished. While there is not "versionless" reality, ideological discourse is characterized by its relevance for matters of *power relations* in society. Many discourses encompass a dimension relevant to the current balance of social power, but not all of them do. Ideology is particularly relevant in discourses that focus on matters such as the distribution of resources and the authority to make decisions that affect society. Furthermore, ideological discourse invariably relies on a polarized tension between 'us' and 'them' (van Dijk, 1998) where the opposing pronouns can in turn identify clearly defined social groups, or the changeable associations of individual positioning within a given interaction. Bourdieu has criticized the concept of ideology in the Marxian tradition, particularly in Althusser, whom he accuses of having "a sort of a religious notion by which you must climb by degrees to the truth, never being sure to have achieved the true Marxist theory". (Bourdieu & Eagleton, 1994: 267) According to Bourdieu, 'ideology' retains the notion of "separation between the true knowledge – the possessor of science – and false consciousness" (ibidem). Boudieu further argues that "Marxism, in fact, remains a sort of Cartesian philosophy, in which you have a conscious agent who is the scholar, the learned person, and the others who don't have access to consciousness". (Bourdieu & Eagleton, 1994:268) On this ground Bourdieu actually rejects the term and instead adopts the concept of *doxa*, spontaneous belief or opinion, a notion which emphasizes how certain ideas are naturalized and come to gain the status of unquestioned reality. Bourdieu's point, which is of great relevance for my own project, is that consciousness is not at the core of social life.

> The social world does not work in terms of representation. The social world doesn't work in terms of consciousness; it works in terms of practices, mechanisms, and so forth. By using doxa we accept many things without knowing them, and that is what is called ideology."

(Bourdieu & Eagleton, 1994:268)

I agree with Bourdieu's reflections on the necessity to move from an emphasis on the relevance of consciousness to an emphasis on the relevance of practices in the reproduction of systems of power. Discursive practices clearly fall within the realm of practices. Their strength is in the contribution they make to something very concrete, what Bourdieu's calls "the unconscious manipulation of the body". By naturalizing certain power relations – Bourdieu makes the example of male domination – linguistic exchanges act as powerfully and forcibly as economic exchanges. (See Bourdieu & Eagleton, 1994:271). Moscovici's theory has the advantage of focusing explicitly on the *observable social process* by which new events are shown to receive interpretations dictated by ideologies in given segments of society. Furthermore, the term "Social Represenations" is not burdened by a long history of scholarly debate as much as the term "ideology" is. However, the term "ideology" has the advantage to focus specifically on power relationships within society. In this respect "Social Representations" is perhaps too general a term. None of the two notions is perfect then. With these premises, I shall use the terms Social Representations or ideology when I refer to the structured set of power-related beliefs that seem to be the backdrop, the unspoken frame of reference of participants' discourses.

5.9 Criticisms of Social Representations Theory

SRT has provided the theoretical frame for hundreds of empirical studies in Europe and in South America, including authoritative treatments of the reception of biotechnologies in Europe (Wagner & Kronberger, 2001, Bauer & Gaskell, 2002a). However the theory has also been the object of severe criticism. In the following section I will

discuss some of this criticism, particularly from the perspective of Discursive Psychology.

5.9.1 Theoretical vagueness

Some authors, while espousing the theoretical framework of the discipline lament that the vast array of methodologies used in studies within SRT reveals a "lack of conceptual clarity" (Bauer & Gaskell, 1999). The success of the theory and its versatility have also meant that it has been used to provide theoretical grounds for studies so different in their scope and method that looking beyond the "brand name" it is hard to keep clear what belongs to the theory and what does not. Bauer and Gaskell's criticism is hard to deflect: Because such different methods are appropriate for different analytical questions, how can all reveal the same kind of social representations, if, that is, SRs can be appropriately characterized as a clear analytical object in the first place? Either the Theory of Social Representations is not well defined; or it is not a theory at all, since its explanatory power does not have a well defined field of application (Potter & Litton, 1985). If the notion of Social Representations cannot be clearly set apart from other key notions in social psychology, like beliefs and attitudes, then there is no special and unique object of enquiry. Fraser for instance has claimed that SRs and attitudes are "largely interchangeable and a fusion of the two would be desirable" (Fraser, 1994:2). Critics discussing empirical works within SRT have asserted that "it is difficult not be impressed by the strong contrast between high statistical precision [of the studies] on one hand and theoretical vagueness on the other" (Ibañez, 1992: 23). Ibañez recognizes that SRT focuses on the fundamental question of what is involved in social thinking. However, Ibañez points out that on the one hand the general propositions of SRT are widely shared within social psychology and are unoriginal; on the other hand the more specific claims of the theory are original but disputable. In particular, Ibañez asserts that there is general agreement that

> people construct actively and collectively their beliefs, knowledges [sic] and feelings about the relevant issues which are of concern in their

> society. There is also a long standing agreement on the fact that these societal knowledge, beliefs and feelings are tied to specific group membership [and] that they originate in everyday communication [omissis]
>
> *(Ibañez, 1992: 22).*

Moscovici's prolific (and sometimes self contradictory) writings over the last forty five years on one hand, and the diverse contributions of influential scholars in the field on the other, make it hard to identify univocally the basic standpoints of the approach and pinpoint an orthodox version of the theory. (See for instance the remarkable distance between the characterizations of the theory by Marková (2000) and Wagner & Hayes (2005).) Conversely, flexibility has been a key factor in the success of the approach.

5.9.2 Novelty and Social Representations

A central tenet of the theory is that SRs allow social groups to come to terms with new phenomena and to understand new facts by integrating them into the structured wealth of knowledge and values which is already the patrimony of the group. These assumptions fit well with studies which look at how society receives novelty, particularly novel scientific findings, and how scientific discoveries become part of lay knowledge. Wagner for instance writing about the reception of biotechnologies has developed the notion of 'collective symbolic coping' with the new technology (Wagner & Kronberger, 2001). However, SRT has been used to study all sort of phenomena, some of which, like food (Lahlou, 2002), madness (Jodelet, 1989), gender (Lloyd & Duveen, 1992), may be of great socio-psychological significance but do not necessarily involve novelty. Still, Moscovici (1988), responding to criticisms, has made clear that SRTs are not generated by novelty itself but by the need to make familiar something unknown or otherwise distant or troubling. Homosexuality is as old as sexuality, but it generates social representations. This is especially true when a new event – like the outbreak of HIV – puts homosexuality at the centre of media attention

and of everyday conversations. Most likely, sexuality in general may generate social representations (see for instance Wagner, Elejabarrieta & Lahnsteiner, 1995). Still, it remains unclear if it is appropriate to speak of social representations of domestic animals, fashion or driving.

5.9.3 Sacred and profane: the consensual and the reified universe

Social Representations Theory holds that "everyday thinking differs fundamentally from scientific reasoning" (Wagner & Hayes, 2005). One particularly controversial aspect of the theory is its position about the existence of two clearly distinct "universes", the reified and the consensual. While the reified universe is the realm of science, the consensual is the realm of everyday life, the realm of social representations. Quoting McDougall Moscovici re-asserts that "Thinking, by aid of the collective representations, is said to have its own laws quite distinct from the laws of logic" (Moscovici, 1984b:10). Moscovici advocates the coexistence of different, even contradictory reasoning systems in individuals, a phenomenon he calls "cognitive polyphasia" (Moscovici, 1976). This standpoint rejects the untenable model of the everyday person as an unrealistic "scientist, statistician and bookkeeper" (Wagner & Hayes, 2005:73). The rational model of the subject fails to explain the behavior not only of the everyday person but of the scientist as well. However, Moscovici also insists on the radical difference between the scientific and the "everyday" worlds:

> The contrast between the two universes has a psychological impact. The boundary between them splits collective and, indeed, physical reality in two. It is readily apparent that the sciences are the means by which we understand the reified universe, while social representations deal with the consensual. The purpose of the first is to establish a chart of the force, objects and events which are independent of our desires and outside of our awareness and to which we must react impartially and submissively. By concealing values and advantages they aim at encouraging intellectual precision and empirical evidence. Representations, on the other hand, restore collective awareness and

> give it shape, explaining objects and events so that they become accessible to everyone and coincide with our immediate interests."
>
> *(Mosovici, 1984b: 22).*

This position has been extensively criticized on the grounds that it seems to imply a concession to positivism. SRT has been attacked for assuming that while lay people live in a consensual world, based on shared knowledge and its necessary prejudices, science resides in an essentially different and more 'real' universe. The critical point has been articulated by Purkhardt (1993) and is shared by scholars within the paradigm (Bauer & Gaskell, 1999). I argue that a necessary distinction must be made between scientific/logical reasoning on the one hand and the practices and institutions of science on the other. In the light of the last fifty years of studies in the sociology of science (Latour & Woolgar, 1979, Latour, 1987) it cannot be sustained that scientific practice should be placed above and beyond the realm of social representations and in a different realm of "objective" facts. Moscovici's two cognitive universes can better be described as cognitive postures, frames of mind. In this sense the two universes can be associated with other distinctions made in psychology. For instance, the distinction between "rational thinking" and "experiential thinking" in Cognitive Experiential Self-Theory (CEST; Epstein, 1990) assumes that people have two modes of thinking, one rational (logical, analytic, dispassionate) and the other emotional and holistic, aiming not so much at finding the correct answer but at organizing and controlling threatening and incomplete information.
Some passages in Moscovici appear do allow this interpretation. While scientific endeavor calls for open-minded exploration, the realm of everyday thinking boils down to reducing what's new and disturbing to what is familiar:

> What I mean is, that consensual universes are places where everybody wants to feel at home, secure of any risk of friction or strife. All that is said and done there only confirms acquired beliefs and interpretations, corroborates rather than contradicts tradition."

(Moscovici, 1984b: 24)

Common sense seeks closure, answers that provide at least temporary relief from uncertainty. On the contrary, the essence of scientific thought seems to rest precisely in posing questions, entertaining doubts, juggling uncertainty, and recognizing lack of knowledge for what it is. Sometimes in order to find good solutions we need to be able to coexist with ignorance for a long time, and possibly never to come to definitive answers. Individuals can shift from "scientific" to "non scientific" mode depending on social, emotional and cognitive needs. Nobody would ever buy lottery tickets if they were in a "scientific mode", but obviously lots of people do, scientists included. In some descriptions of the theory, ways of thinking are described almost like clothes one wears for the appropriate occasion. As Wagner and Hayes put it:

> Contemporaries in Western and non-Western societies alike face a variety of situations where particular modes of reasoning fit better than others. Some are more useful in the family and in matters involving relatives, others are more apt for solving problems in political, economic, societal, religious or scientific matters.
>
> *(Wagner & Hayes, 2005:234)*

I argue that the practices of reasoning in everyday tasks and in science belong to different social realms. Such realms have their own rules for what counts as appropriate evidence in a particular context. I will distinguish 'Scientific reasoning' as a *cognitive posture*--an inductive practice, characterized by logical argumentation, curiosity and inductive thought, something all humans, not scientists alone can in theory attain--from science as profession and institution. My own argument against the idea that science might be set above and beyond the realm of social representations goes as follows: science is an institution and represents the apotheosis of the use of pre existing knowledge to understand new phenomena. There is a paradox in the division between reified and consensual, for if we all are immersed in a world of social representations

that capture our senses and affect our thought, why should science be the one domain in which we are stripped naked of all our previous knowledge and manage to reach above our own accumulated beliefs? In science more than in everyday life we constantly rely on the findings of others which we believe to be true and call *knowledge*, in order to further our own investigation. Moreover, scientific endeavors like the rest of people's experiences are subject to the pressures and constraints of social life. My point is that scientific thinking is only part of what happens in science, and it is also part of what occurs in everyday thinking. Consider a trivial task which requires common-sense decision-making and compare it with scientific practice. While facing the task of choosing laundry soap, many factors come into play, "common sense" and "rational" or "logical" arguments among them. One could think that choosing the soap on the basis of its cost/efficiency ratio is the rational way to proceed. However, we know that many other factors come into play when making such a decision. This is why billions are spent every year marketing products. Marketers tap into our emotions (Zaltman, 2003) in order to build rationally non-justifiable preferences for a given product. Part of the logic that guides the purchase of laundry soap is about fulfilling the requirements of the community where the soap has to make its 'contribution'. Will the children like it? Will the package fit in the cupboard where soaps are kept? The same holds for science. Science is an activity performed within a community, and there are precise but ever changing requirements that need to be fulfilled for a scientific report to be considered as making a contribution. There are fashions and accidents of history that have little to do with a strictly inductive "scientific" form of reasoning; these fashions enter into the practice of scientific enquiry and reporting because they are the requirements of the community to which the scientist belongs. Science is and has for long been an institutionalized establishment which sets its own rules and decides who is inside and who outside. There is no science without the approval of the community of fellow scientists. There are group norms and customs that need to be addressed by any scientist and that are just as important for the meaningfulness of a piece of work as the rigor of its

reasoning. For a start, one needs to address questions (empirical, methodological, and theoretical) that are currently important to one's own community, for otherwise one's work would be irrelevant. Most importantly, if thinking is, as Moscovici argues, inherently social, there is no better example than the scientific community to prove it. For it is under the supervision of senior scientist that young researchers forge their mentality, judgments, and prejudices. It is there that they learn what counts as science and what does not, what are the rules and practices of the art. So, if at the core of science there is a purely inductive, rational form of reasoning, I argue that this is partly also the case when the everyday person sets off to buy a bag of soap. And if then we are to consider other factors that clearly affect scientific *production*, like the likelihood of one's research being funded or having the opportunity to work on a "hot" topic, these are collateral factors of the kind likely also to influence the purchase of soap. Can we argue that they are part of the scientific way of thinking? Maybe not: they are corollary elements that weigh on one's ultimate decision, but so is the case for the decision to buy one kind of soap over another.

5.10 Social Representations and the communicative process

From my perspective, the most problematic aspect of SRT lies in its lack of attention to what happens in the communicative process. This is the reason why I began my investigation within the paradigm of social representations and ended up on the shores of Discursive Psychology. SRT since Moscovici's early studies puts great emphasis on the communicative process, conceptualized as the constant flux of information that we are immersed in and contribute to. It is in the "unceasing bubble" (Moscovici, 1984a.: 950) of everyday chatting that social representations are acquired, exchanged and transformed. In his study on the reception of psychoanalysis, Moscovici (1976) characterizes three different types of communication in the French press during the

1950s: diffusion, propagation and propaganda. These three forms of communication have produced different social representations of psychoanalysis within different social milieus in French society. While a neutrally informative style of communication aimed at the general public generated acceptance of psychoanalysis, a partisan, agenda-driven description aimed at the readers of communist press resulted in the rejection of psychoanalysis as 'capitalist' and thus corrupted practice (Moscovici, 1976). Huguet, Latanè & Bourgeois (1998) have shown that with passing time social representations of human rights become more uniform, that is shared, between persons who with some frequency discuss and exchange viewpoints on the subject. This finding may appear uncontroversial. Social beliefs are most likely acquired and exchanged in society through the communicative process. The problem is that human communication happens fundamentally though language. Even if visual communication is a powerful medium, it is parasitical on concepts that are acquired and exchanged through language (van Dijk, 1998). For instance, an image that appeared in the mid nineties in Austrian magazines accompanying articles on GMOs showed two latex gloved hands injecting something with a syringe into a tomato (see Wagner & Kronberger, 2001). Such an image could have meant many different things to someone who had never heard about genetically modified organisms: are tomatoes sick and need injections? Is someone poisoning our tomatoes? With the appropriate commentary the image acquires a specific sense and from that moment becomes a powerful icon which vividly incorporates the uncanny features of genetically modified organisms. Social Representations are "means of constructing reality" (Moscovici 1988: 230), and most of the time they are formulated linguistically and to this extent language dependent. Since much of our making sense of reality and transmitting it is linguistically bound, language is one of the key instruments for constructing reality. Language also tells us about the author of a "representation" and reveals how the depictions provided are intertwined with larger sets of beliefs and expectations. Moscovici has attributed importance to linguistic phenomena for the study of SRs since his early work on the reception of

psychoanalysis in France (Moscovici, 1976: 407). However, in practice SRT remains primarily a cognitive endeavor, in that little attention is paid to the complex ways representations are exchanged within a social encounter - the natural setting for the creation and transformation of socially shared beliefs. This is the main criticism aimed at the theory coming by discourse oriented psychology. Potter and Edwards note that within the practice of SR studies, conversation

> has the anomalous position of being at the heart of the SRT as the engine for the generation and refinement of representations, and yet being a topic which has received no analytic attention, and where the relevant literature in conversation analysis (…) has been ignored
>
> *(Potter & Edwards, 1999: 449).*

Sociology, linguistic pragmatics, anthropology, sociolinguistics, and discourse analysis as partially overlapping but distinguished disciplines have all struggled to develop concepts and methodological instruments aimed at the study of the phenomenon that lies at the very heart of social knowledge, namely everyday informal conversations between people in social encounters. However within SRT these instruments are not used and research is mostly carried out using methods appropriate for a non anthropological social psychology: questionnaires, content-focused interviews, content analysis of media, word association tasks. Authors within the paradigm of SRs notice that ethnography is an effective methodology to research communities and remark that "it is perhaps a little surprising that ethnography has not been widely used in the study of Social Representations" (Wagner & others, 1999:103) although there are some important exceptions (Jodelet, 1989; Lloyd & Duveen 1992). While one is more likely to understanding children through observation than through questionnaires, social representations in adults are usually studied by asking them what they think of a given phenomenon.

Representations are as a result constructed as mostly mental entities extracted from subjects by elicitation, with little attention to how they naturally emerge in everyday life and how they are conveyed between social actors. There is an unspoken but implicitly assumed transparent

relation between what is thought and what is said. What is said thus transmits thought to the researcher, who proceeds to code and classify it. This linear assumption is perhaps not a problem with measurable data, like wealth or votes, but it becomes an issue for action data of any kind. Speech, as it has been extensively argued, is action (Austin, 1975; Clark, 1996).

5.11 The meaning of communicative action

A need to articulate further the mechanisms of meaning construction in social research is not an issue for SR theory alone. Rather it is an ongoing problem for all sciences that deal with interpretative data. The matter can be subsumed under the vexing question of what exactly social studies measure when data are the result of intentional communication: filling out a questionnaire, participating in an interview or any other experimental setting which requires subjects to give accounts and assessments.As Habermas argues, the problem of the measurement of social facts is linked to that of the "transformation of communicative experiences into data" (Habermas, 1990: 100). Otherwise put, when we measure interactional data, what are we measuring? What is the epistemological status of the responses we classify, count and use to further a certain line of argument? Habermas frames the problem of the role of interpretation in the measurement of social facts as follows:

> Standards of measurement are rules in accordance with which everyday experiences that have been interpreted in ordinary language are reorganized and transformed into scientific data. No such interpretation is fully determined by the experienced material itself".
>
> *(Habermas, 1990: 97)*

Habermas finds some answers in the phenomenological approach of Aaron Cicourel, whom he quotes extensively:

> The precise measurement of social process requires first the study of the problem of meaning in everyday life. The meaning communicated by

> the use of day-to-day language categories and the non linguistic shared cultural experiences inform every social act and mediate (in a way which can be conceptually designated and empirically observed) the correspondence required for precise measurement. The literal measurement of social acts (…) requires the use of linguistic and non linguistic meanings that cannot be taken for granted but must be viewed as objects of study. In other words, measurement presupposes a bounded network of shared meanings, i.e. a theory of culture. The physical scientist alone defines his observational field, but in social science the arena of discourse usually begins with the subjects' preselected and preinterpreted cultural meanings. Because the observer and the subject share cultural meanings interwoven with the language system they both employ for communication, the shared everyday meanings and the particular language used by the sociologist form a basic element of the measurement of social acts.
>
> *Cicourel, (1964) quoted in Habermas (1990: 104).*

The possibility of measuring social facts depends on the possibility of understanding the rules that determine how meanings are constructed in communication:

> (…) The "rules" governing the use of language and the meanings conveyed by linguistic and non-linguistic utterances and gestures are unclear and remain an almost untouched problem for empirical research. If the "rules" governing the use of language to describe objects and events in everyday life and in sociological discourse are unclear, then the assignment of numerals or numbers to the properties of objects and events according to some relatively congruent set of rules will also reflect a lack of clarity.
>
> *(Cicourel, 1964 quoted in Habermas,1990:105)*

These are not the rules of grammar, but rather the "fundamental rules to which communicative action in the world of everyday life conforms" (Habermas, 1990: 105). These are social norms embedded, intertwined, inextricably knotted in linguistic action that constitute the very basis of

socio-linguistic competence. By paying attention to the rules of communicative action, studies in ethnomethodology, sociolinguistics, pragmatics and discourse analysis have focused on the conventional ways people accomplish things in interaction, including giving descriptions, offering opinions and manifesting attitudes. The findings of these disciplines can shed some light on the socially dependent ways in which representations are formulated in communication and thus improve our insight on representations themselves.

5.12 From inner states to linguistic action: Discursive Psychology

One example might clarify how the rules of communicative action shape verbal data. In the course of a research interview it happens that participants will talk in ways that we normally associate with incompatible attitudes. The phenomenon has been exemplified by Wetherell and Potter (1988). The authors provide two quotes expressing opposed views, which turn out to have been issued by the same person in the course of the same interview. Such occurrences can be problematic if one assumes that the expression of viewpoints is linked to holding stable beliefs. Because the two opinions are expressed during the same interaction in the very same setting, we cannot easily explain the phenomenon as cognitive polyphasia. Rather than assuming that sane people think/believe one thing and its opposite at the same time, proponents of discursive psychology programmatically avoid the question of what people think and instead look at the expressions of opinion as instances of social action, as performances (Edwards, 2005: 266). Voicing a certain view is treated as a way of claiming an image for oneself, or as a strategy for avoiding blame, or persuading the interlocutor. As has been argued exhaustively, the "rules of communicative action" involve a complex interplay of position-taking in the context of what is often a recorded, institutional interaction. They require the attentive micro management of one's ritual face (Goffman,

1967). Within discourse-oriented psychology, some have tried to give a very different explanation for the expression of self-contradictory opinions. Billig has proposed that self-contradiction might be involved in the process of understanding. He argued that the expression of contradictory views rather then being a symptom of internal confusion can actually serve cognitive aims. Voicing contradictory views can be a way in which people think aloud, jostle with different opinions and consider them in their various aspects. (Billig, 1987; 1991a; 1991b). Unfortunately, because of the nature and the objectives of "opinion-collection" studies, both the pervasive impact of the necessity to protect one's social persona while responding on a controversial topic and the cognitive role of self contradiction, confusion and "voiced thinking" in the replies must be downplayed. When the aim of a study is to "count thoughts" thoughts must be reduced to countable items, which for the purpose of the study must be assumed to be consistent and discrete units.
The works of Billig, Wetherell and Potter mark the beginning of a turn in social psychology that proposes to substitute the study of inner states with the study of linguistic action (Potter & Weherell, 1987; Wetherell & Potter, 1988; Edwards & Potter, 1992; Wetherell & Potter, 1992). The 'Discursive Psychology' approach is born in polemic, questioning the common assumption within social psychology of the existence of what Billig calls 'ghostly essences' (Billig, 1987). These might include attitudinal systems understood as well formed cognitive structures which are conceived as residing in people's minds, lying behind what they say and do, and impinging on surface phenomena including both talk and non-linguistic behavior. Discursive psychology assumes that the phenomena to be studied are those produced during social interaction and not what is behind the conversation or the behavior. Among exponents of DP, Billig has argued that precisely by studying language use one studies the process of thinking. According to Billig thought simply cannot be distinguished from its expression in argumentative conversations:

> Cognitive psychologists have assumed that thinking is a mysterious process, lying behind outward behaviour. However, the response and counter-response of conversation is too quick for it to be the outward

> manifestation of the 'real' processes of thought. The remarks are the thoughts: one need not search for something extra, as if there is always something lying behind the words, which we should call the `thought'. Wittgenstein put the point graphically: `When I think in language, there aren't meanings going through my mind in addition to the verbal expressions: the language is itself the vehicle of thought' (1953: remark 329). [Omissis] In short, to discover what is being thought, when words are uttered, the observer should analyse the rhetorical complexity of the utterances themselves. Thus, discussions, in which people are responding rapidly to new dialogic challenges and are in their turn creating such challenges, offer the psychologist a royal road to examining thinking in action.
>
> *(Billig, 1997b)*

Introspection tells us that even when one thinks alone, in silence, the thought process relies on language. However, I notice a contradiction between a strategic notion of language use on the one hand and what Billig proposes here, which is a view of language use as, once again, a route to thought. One would think that either we are opportunistic performers who express an unlimited number of attitudes, shifting from one to another depending on social necessities, or else that we *really* exist cognitively "on the surface," thinking socially and transparently. Unfortunately Billig's position does not account for the obvious fact that people lie, which shows that it is not always the case that "the remarks are the thoughts"; there is a distinction between what we think and what we say. However, Billig's line of argument accounts for a particular kind of interaction and private talking which is crucial in the life of the self. Billig's emphasis on the role of dilemmatic thinking proposes that thought is essentially argumentative, a proposition which resounds with Bakhtin's notions of "inner speech" and dialogism and is in agreement with dialogically oriented versions of SRT (Marková, 2000). The discursive approach proposed by Billig, Potter, Wetherell and Edwards provides a new perspective within social psychology for analyzing the ways people give opinions, remember and express attitudes. The approach proposes to study the "expression of inner states" as social

action, usually performed outside a lab, in more natural settings, precisely in the usual conditions where social representations are supposed to be created and exchanged. In particular, the approach does not treat responses as free standing manifestations of inner states. The level of enquiry is on the action being performed linguistically. Discursive psychology is now a well established approach with thematically specialized versions. In particular in the works of Edwards the focus is often on the use people make of psychological terms, like 'thinking', 'believing' or 'feeling'. The fundamental standpoints of DP can be briefly outlined in a schematic way:

1. Discourse is a social practice, an empirical phenomenon rather than an abstraction or an epiphenomenon linked to inner states.
2. The analysis focuses only on discourse with no attention to its supposed referent, be that reality or what is in people's minds.
3. Discourse is an activity which "gets things done" (Edwards and Potter, 1992)
4. The research deals with naturally occurring data. Talk is transcribed verbatim-
5. The enquiry is concerned with the *content* of text and talk and looks at social aspects of it. As Potter and Wetherell wrote: "Our concern is not purely with discourse per se; that is, we are not linguists attempting to add social awareness to linguistics through the addition of the study of pragmatics. We are social psychologists expecting to gain a better understanding of social life and social interaction from our study of social text". (Potter and Wetherell, 1987 p.7).
6. The analysis aims to reveal the *function* a certain discourse has in a given moment, the aims, interactional or otherwise social, which are pursued through discourse.

I largely share the rationale of this approach. I hold that the analysis of discourse is useful for doing social psychology; it neither substitutes for nor overrules other social psychological methods. I am convinced that a

discipline that deals with verbal expressions of attitudes, evaluations and descriptions needs a well spelled-out theory of what happens in the course of social interaction. A structured interview and an experimental setting in which participants are required to express their views or imagine dilemmas and give their opinions on an imaginary scenario are first of all social encounters; the views expressed therein must be looked at as instances of social action. In any social context, giving an opinion is not simply (if at all) the expression of an inner state; it amounts to "taking a stance in a controversial matter"(Billig, 1991a). The same is true for the expression of attitudes. According to Billig attitudes should be approached in their rhetorical context because they are stances expressed in public. Billig asserts that subjects mostly do not possess a clear cut system of reference that they pull out when asked to express an opinion. Rather, they flexibly produce standpoints that are dependent on the context of expression and on the scope of the actual situation. The expression of attitudes is social in the sense that attitudes divide and unite people. Attitudes about items on which everybody agrees are not even discussed. A certain level of controversy is a necessary part of an attitude; thus expressing an attitude is equivalent to taking a stance in a debate. As Billig puts it: "an attitude is not merely an expression of the attitude-holder's viewpoint; it is also an implicit, or explicit, opposition to a counter-viewpoint" (Billig, 1993: 57) One way to study attitudes as articulated stances is to study how discussions unfold and how people engaged in a conversation express themselves. By looking at dialogue one can access the *process* of thought, but not a person's thoughts as objects. Traditional social psychology focuses on more or less stable grids in people's mind, on mental schemata or coherently displayed attitudes, and the mind is modeled as a receptacle of propositional thoughts. DP does not concern itself with these features of the mind, and instead it looks at thought as the process that it is generated and modified during the activity of interaction. What we see in action during conversation is not a reflection of the content of someone's mind; it is the ongoing process of constructing a coherent and defendable version of facts compatible with a number of constraints: the history of the subject,

the social, often institutional setting of the encounter and the scope and aims of the participants in the encounter.

5.13 Interpretative repertoires

Within a constructionist sociological framework, Gilbert and Mulkay (1984) used the notion of 'interpretative repertoire' in their studies on the rhetorical construction of scientific facts. As Gilbert & Mulkay (1984) found interviewing scientists, the development of a scientific theory and its results are narrated in radically different ways depending on the context of the account. In public texts scientists recount the process of construction and corroboration of a scientific discovery as a procedure in which theory, methodology and empirical evidence take their idealized places. In this kind of narrative, the world is made of objective facts that are discovered thanks to scientific procedure. However, during 'hats off' conversations the very same process can emerge as a much less coherent progression which incorporates interpersonal dynamics, often involving curious inversions between empirical corroboration and theoretical hypotheses. Some arguments, with correlated lexicons and distinct overall linguistic registers (the "empiricist repertoire") are appropriate for an institutional context, while others (which are labeled the "contingent repertoire") are used in informal situations, usually in the context of describing things that went wrong. Gilber and Mulkay's point is that both repertoires converge to provide an image of science as factual and objective. While the "empiricist" repertoire offers a polished and coherent depiction of the progression of science, where everything falls into the right place, the contingent repertoire downplays failures (for instance a difficulty to replicate the desired experimental result) as "contingent". The difficulty to replicate an experiment may for instance be ascribed to human error. By these means, what could be potentially a serious objection to the correctness of a theory is represented as non problematic.

The concept of Interpretative Repertoire has been developed within Social Psychology by Wetherell and Potter (Potter & Wetherell, 1987;

Wetherell and Potter, 1988; Wetherell & Potter, 1992) and constitutes a content-related analytic unit for researching representations in discourse:

> In dealing with lay explanations the analyst often wishes to describe the explanatory resources to which speakers have access and to make interpretations about patterns in the content of the material. The interpretative repertoire is a summary unit at this level. Repertoires can be seen as the building blocks speakers use for constructing versions of actions, cognitive processes and other phenomena. Any particular repertoire is constituted out of a restricted range of terms used in a specific stylistic and grammatical fashion. Commonly these terms are derived from one or more key metaphors and the presence of a repertoire will often be signalled by certain tropes or figures of speech.
>
> *(Wetherell & Potter, 1988: 172).*

The unit of analysis is located at the level of speakers' linguistic "explanatory resources". In a study of racist discourses in New Zealand (Wetherell & Potter, 1992), the authors found that white middle class New Zealanders when interviewed often argued that aborigines are a cultural patrimony, apparently showing appreciation for aborigines. However within the same interview respondents would also express strikingly racist views of aborigines. The two authors consider 'Cultural patrimony' not the expression of an attitude toward aborigines but an interpretative repertoire. The interpretative repertoire is an argumentative articulation which serves different interpersonal aims in the course of the interaction. For instance it can give credibility to the speaker, toning down an otherwise blatantly racist position. This type of analysis moves from the study of inner states to verbal expressions. There is no explicit claim about what speakers think. Also, the units of analysis are not sets of individual attitudes or the attitudinal system of a single person. Rather, researchers illustrate the inner logic of the many discursive arguments persons use and modify for their immediate aims. The authors explore the effects of these widely shared discursive repertoires about aborigines and immigrants. They argue that the flexible deployment of widely shared arguments generates a subtle and pliable negative construction of

native New Zealanders, one whose racist undertones are nonetheless hard to isolate and thus confront. Such a representation is possibly even more damaging and dangerous than any full fledged racist view, for it offers multifaceted justifications for social injustices. Repertoires have their own logic and terminology. Here is a further definition:

> By Interpretative repertoires we mean broadly discernible clusters of terms, descriptions and figures of speech often assembled around metaphors or vivid images. In more structuralist language we can talk of these things as systems of signification and as the building blocks used for manufacturing versions of actions, self and social structures in talk. They are some of the resources for making evaluations, constructing factual versions and performing particular actions. Interpretative repertoires are pre-eminently a way of understanding the content of discourse and how that content is organized. Although stylistic and grammatical elements are sometimes closely associated with this organization, our analytic focus is not a linguistic one; it is concerned with language use, what is achieved by that use and the nature of the interpretative resources that allow that achievement.
>
> *(Wetherell & Potter, 1992: 90).*

The interest of the authors is in rhetorical constructions. They focus on how forms of talk and writing give an effect of realism to particular versions of a story, which thus acquire the status of accepted fact. Realism in this kind of analysis is "a product of a historical developed familiarity in the use of discourses" (Wetherell & Potter, 1992: 94). Certain Interpretative Repertoires become cultural repertoires, 'commonplaces' Billig (1991b) which are taken-for granted and seldom challenged in one society. The hermeneutic of the Interpretative Repertoire enquiry uses rhetorical categories: metaphors, effects derived from categorization, particularization, the use of vivid and systematically vague formulations, narrative techniques involving consensus and corroboration, polarization, lists and contrasts. Other categories used in DP are associated not with the linguistic form of expressions but with the effect an utterance is meant to achieve. The expression "Stake

inoculation" (Potter, 1996) is used to describe moves which downplay or deny the partisan interest of the speaker in matters under discussion, independently form how in the context such "inoculation" is performed. The categories I use in my study rely on the ones of DP. However, I also make use of more linguistically oriented tools and of the systematization proposed by van Dijk's discourse analysis. I illustrate my categories in detail in the following chapter. DP shares many assumptions with discourse analysis inspired by the works of Foucault (Wetherell, 2001). However, exponents of DP have distanced themselves from versions of Critical Discourse Analysis in which the social practices of discourse are not analysed in detail. Arguably, when text is not the object of the attention, discourse analysis focuses on abstract entities which act upon each other to shape our reality. The analysis becomes what Wetherell and Potter call a patchwork or "tectonic study of discourses" (Wetherell & Potter, 1992: 90). In these analyses the detail of the discursive context, in which ideologically loaded concepts are mobilised and thus filled with locally generated meaning, is lost because of lack of attention to the actual linguistic practices of participants.

5.14 Criticisms to Discursive Psychology

In my analysis of newspaper articles I use analytic units systematized by Theun van Dijk in his works on racist ideology (van Dijk 1995, 1998). I have found van Dijk's categories useful when trying to describe the linguistic details of discourses about biotechnologies in the press. I wanted to pinpoint how stance is expressed in discourse at several levels, from the macro organization of a newspaper editorial to lexical choices and other micro features of text. Van Dijk's emphasis on the influence of discourse in the construction and reproduction of racism, and his detailed linguistic analysis, put his work close to that of Discourse Psychologists. However, van Dijk's epistemic stance allies him closely with assumptions of SRT, by contrast with the epistemology of DP. Contrary to the relativist (or anti-realist) standpoint of DP (Wetherell, 2001: 394)

van Dijk holds a realist position. His work on racism debunks discourses that mystify the reality of racist discrimination by representing issues related to minorities and immigration in a distorted manner, a position which implicitly commits him to a view that there must be a way of describing these issues closer to how things really are. Also, van Dijk keeps central a notion of ideology as shared representations with correlates in individual minds. He considers ideologies to be socially shared cognitive structures generated and exchanged in the communicative process. Accordingly, van Dijk has trenchant objections to the anti cognitive claims of DP. He argues that discursive psychologists have disposed of the operational concept of mind without having proposed a valid alternative. Criticizing discursive, rhetorical and social constructionist psychology van Dijk targets the works of Billig (Billig, 1987, 1988, 1991a,); Edwards and Potter (1992), Potter and Wetherell (1987) (see van Dijk, 1998:43 and 324, note 13). van Dijk formulates DP's position about the concept of attitude as follows:

> Some social psychologists have criticized the traditional notion of attitude on (…) anti-cognitivist ground. They dispute that people 'have' something like attitudes in the first place, and that such attitudes control people's actions or discourse. According to these critics, opinions or attitudes do not 'exist' at all, at least not as 'fixed' mental representations. They emphasize that opinions (like the mind in general) are social constructions. Moreover, these scholars emphasize that opinions should be defined in terms of their discursive formulation. For them, opinions vary with the context in which language-users rhetorically engage in debate or other interaction with other participants. Instead of attitudes, discursive 'repertoires' are proposed to account for such variations in the formulation of opinions. And if attitudes should 'exist' mentally at all, they should rather be dynamically represented as some kind of rhetorical structure, or as an argument.
>
> *(van Dijk, 1998:43)*

In the following pages, van Dijk argues against his characterization of the DP position. He argues in general terms that

> if all 'non-observable' mental entities would need to be dispensed with, we would also have to throw out beliefs in general, including knowledge, rules, and of course discourse meaning, among other cognitive notions. Moreover, interaction and discourse structures themselves are abstract and hence unobservable. The same is true for other practical and theoretical 'unobservables', such as groups, power, inequality, institutions, society and culture, which we also postulate (in a social theory) in order to be able to describe and explain people's activities ('behaviour') among other things. In sum, if 'observable' were a criterion, neither commonsense nor theoretical analysis of action, discourse or society would be possible, no more than an analysis of people's minds."
>
> *(van Dijk, 1998:43)*

Hence, van Dijk claims that DP is a form of interactionist or even behaviorist reduction that "fails to describe and to explain fundamental properties of both thinking and discourse".(ibidem) van Dijk observes that

> denying the existence of attitudes because they are 'unobservable' would in this case be as silly as affirming such existence, simply because there would not be any direct evidence for either claim. This is the case for *all* properties of the mind. They are postulated, practically and theoretically, because they are real in their consequences: they explain how and why people can 'meaningfully' and 'purposefully' act and talk. They explain very powerful common-sense self observations: people know they think, they know they know they think, and they know they 'have' opinions, whether or not they express them, and even if they express them differently in different situations.
>
> *(van Dijk, 1998: 45)*

Criticizing in particular the status of Interpretive Repertoires van Dijk asserts that

> they are left undefined as to their precise structure and status, or in fact boil down to something (unobservable!) people 'have". They are a form

> of knowledge or belief, and hence mental. After all, we can hardly assume that repertoires are floating in the air or in people's mouths. If they allow people to talk or understand talk and text, we have no alternative but to locate them in the minds of people, as in the case of grammars, discourse rules, norms, and indeed knowledge and beliefs.
>
> *(van Dijk, 1998: 45)*

Academic polemics are sometimes carried out by setting up a straw-man who is then easily trashed and burned. The position criticized is characterized in terms that the theory's proponents would not recognize. Discursive Psychology points to limits of attitude research by challenging the assumption that respondents "pull out" pre-formed, de-contextualized attitudes on request for the social researcher. Discursive Psychology also argues that talk is social action, thus to be analyzed as such, and not as the free standing expression of thought. However DP has not (as far as I understand) argued that what is unobservable does not exist, that interpretative repertoires have nothing to do with what goes on in people's minds or that people have no minds at all. Repertoires (again, as far as I understand them) are ways of talking *and* understanding and are used ad hoc to further certain lines of arguments. What differentiates Repertoires from social representations - which too are ways of thinking and talking - is a programmatic emphasis on performance, the roots of which I will discuss in later paragraphs in this chapter.

5.15 Limitation to Discourse

Van Dijk criticizes also what he describes as a lack of interest on the part of DP in social practices. van Dijk claims that reducing the analysis to verbal 'repertoires' overlooks the fact that discrimination is based on prejudice, and that prejudice exists even when we cannot observe discriminatory behavior. Both proponents of DP and van Dijk are greatly concerned with the textual realization of communicative acts. Both have a similar interest in the linguistic details of discourse. While van Dijk

adopts a realist position, exponents of DP propend for a relativist one (Wetherell, 2001:394). However, both van Dijk and DP researchers assume that text is a fundamental locus of the construction, exchange and modification of social reality. The rationale of discursive approaches is that discourses shape our perceptions and structure the social world we inhabit. However, a focus on discourse may be limiting. Restricting attention to verbal behavior ignores fundamental powerfully constitutive extra linguistic aspects of social life. Material structures and practices are left out of the analysis of discourse. While van Dijk criticizes DP for focusing on discourse over social practices, he himself chose to focus his attention on racist ideology as expressed in writing in a disturbing academic text (van Dijk 1998) and in a series of editorials in the New York Times (van Dijk, 1995), and not 'in the field' nor with other social artifacts . This is hardly surprising: the tools of *textual* discourse analysis are apt for analyzing language in use. Finally, DP researchers have made explicit that, although their work focuses on discourse, they do not consider discursive practices to be exhaustive of the constructing powers of social landscape (Wetherell & Potter, 1992:63). Material conditions, such as migration, war, finance, politics obviously shape nations and lives. However, material elements inevitably enter social life inseparably from the discourses that offer representations of, or give meaning to, those material elements. As such, discourse is *constitutive* of social life as much as material conditions. (See Wetherell & Potter, 1992 ibidem)

5.16 Stakes, ideology and discourse

One criticism moved to DP has to do with its anti-mentalist and contingently strategic notion of subjects' agency. Within DP, the thoughts of participants, the ideas they might hold, are programmatically not taken into consideration. Further, subjects are not seen as carriers of the project or ideas of a group. Discourses thus conceived seem to have merely the function of fulfilling the contingent and ever changing strategic needs of participants in the course of interaction. Such a

perspective risks undermining the force of the analysis, for it locks voices and discourses in the ghetto of extemporary moves. On this subject, Carla Willig argued that:

> DP is unable to account for why particular individuals, or groups of individuals, pursue particular discourse objectives. Why is it that speakers work so hard to disclaim certain attributions?
>
> (…)
>
> in other words, DP assumes that all conversation is driven by stake and interest; however, it is unable to account for what motivates people to adopt, or fail to adopt, a particular stake or pursue, or fail to pursue, a particular interest. Put another way, DP brackets, and yet relies upon, a notion of motivation or desire, which it is incapable of theorizing.
>
> *(Willig, 2001:102)*

Within the relativist frame of Discursive Psychology discourses are severed from out-in-the-world reality on the one hand, and from the reality of the self on the other. What is left is a very narrow window reasoning in which the analyst can argue why a participant expressed a certain view in a certain manner. In such an analysis, who decides that one argument represents the "real" view of the participant while another is merely a strategic maneuver? For instance how can we decide if one stance represents the 'true' racist self of the respondent while another is nothing more than a strategic concession to non-racist views? Within a constructionist and relativist perspective there is no *real* view, only narratives and accounts; there is no theoretical ground for attributing one stance or another to a given subject. This is a difficulty for Discursive Psychology, as has been underlined by Carla Willig (2001).

5.17 Action, Cognition and the referential notion of language and communication

Exponents of DP assert that the SRT approach is cognitive rather than action oriented (Edwards & Potter, 1999). This means that SRT focuses on the role social representations play in *understanding* phenomena. For instance, one could say that Catholics in France in the 1960s understood psychoanalysis by analogy with the practice of the confession, a practice they were familiar with, while French communists understood it as a product of the bourgeois practices of the North Americans upper class and as such rejected it (Moscovici, 1976). DP proponents don't deny the cognitive role of representations or ideologies, which would be utterly counter intuitive, but propose an overall different way of dealing with the concept of "understanding" or cognition. DP's concept of cognition is rooted in a pragmatic notion of linguistic meaning which owes much to the works of Wittgenstein (1958) and Austin (1975). In my understanding the divide between the epistemologies of the two disciplines originates in the fact that SRT privileges referential uses of language, while DP has adopted an action oriented view of language and communication. In the following sections, I clarify this distinction which in my view goes beyond the emphasis in DP on the strategic, action-oriented nature of the expressed attitudes (for instance in Edwards and Potter, 1992). In order not to banalize the action-oriented standpoint of DP I return to a long lasting debate in the philosophy of language and to a particular movement within the discipline, Logical Positivism, that developed an extreme version of what largely remains the received view of language within the social sciences.

5.18 Logical Positivism

The most celebrated representative of this philosophical movement is Ludwig Wittgenstein and its most celebrated illustration is offered by Wittgenstein's Tractatus Logico Philosophicus, first published in 1932. Logical Positivism focuses on the truth –conditional analysis of sentence

meaning and holds that truth conditions are central to the understanding of language. In short, within this paradigm we can say that to understand a sentence equals knowing the truth conditions of that sentence. For instance, according to this approach, I understand the sentence:

The cat is on the mat

if I know its truth conditions: if the cat is on the mat than the sentence is true and if the cat is not on the mat, the sentence is false. In order to be able to assign truth values we must also be able to univocally identify the referents for 'cat' and 'mat', and so on. This is a view of language that focuses on the capacity language has to represent, to describe things, leaving aside the social and ritual aspects of language, often described as phatic or emotive and treated as distinct and marginal in respect to the core language functions of reference and predication. This theoretical standpoint has a number of corollaries and consequences:

1 The essence of language is its representational capacity

2 The default, syntactic model of the language unit is the statement, a description (like "the cat is on the mat"). All other occurrences are interpreted on the basis of this baseline model and are reducible to this original form.

3 All linguistic productions not reducible to the essential sentence type are either nonsensical or irrelevant.

4 Communication consists in exchanging meanings contained in statements

Notoriously, Wittgenstein changed his mind and became a proponent of a radically different view of language meaning. At the beginning of his Philosophical Investigations (first published in 1953) Wittgenstein illustrates the referential view of language with a quote from Augustine. Augustine's view of language inspired the Tractatus Logico Philosophicus and remains, implicitly or explicitly, a common view of language meaning and communication: It offers, as W. puts it, "a particular picture of the essence of human language".

> It s this: the individual words in language name objects - sentences are combination of such names. – In this picture of language we find the roots of the following idea: Every word has a meaning. This meaning is correlated with the word. It is the object for which the word stands
>
> *Wittgenstein, 1958. I*

This embodies the idea that language carries meaning from the *form* of words (the sound, the smear of ink on a page) to its content, the concept which the word embodies. Having been one important contributor of the Logical Positivism movement, which relies precisely on this notion of language, Wittgenstein sets off to tear apart such model and proposes an alternate perspective on linguistic meaning.

5.19 Meaning as use: "Philosophical Researches"

> Now think of the following use of language: I send someone shopping. I give him a slip marked "five red apples". He takes the slip to the shopkeeper, who opens the drawer marked "apples"; then he looks up the word "red" in a table and finds a colour sample opposite to it; then he says the series of cardinal numbers – I assume that he knows them by heart – up to the word "five" and for each number he takes an apple of the same colour as the sample out of the drawer. – It is in this and in similar ways that one operates with words. – But how does he know where and how he is to look up the word 'red' and what he is to do with the word 'five'? - Well, I assume that he *acts*[7] as I have described. Explanations come to an end somewhere. – But what is the meaning of the word 'five'? – No such thing was in question here, only how the word "five" is used
>
> *Wittgenstein, 1958 I*

[7] Emphasis in the original.

Wittgenstein argues that the 'label' model of linguistic meaning is not good enough for explaining what language does, and he proposes to substitute a notion of meaning as use. He exemplifies his idea describing a primitive language, consisting only of a limited set of words that allow workers use to coordinate their activity while they pass each other the material to construct a wall. Wittgenstein uses the example of one person shouting "slab" and the other passing him a slab. The implication is the following: "slab" in that case does not *mean* what we might find under a dictionary under the lemma "slab". Rather, it is something like an order. We might want to gloss it as "pass me one of those slabs now" uttered by one worker to the other. W. leads us to a very different notion of linguistic meaning and to what understanding amounts to. In this case, meaning is entirely dependent on the activity type the two workers are engaged in and on the rules they have set up for carrying out the job.The consequences of the shift from a notion of meaning essentially linked to the link between word and concept to a notion of meaning as use is of great consequence, for it roots meanings in the social activities in which words are used, what W. calls *language games*. Consequentially the focus moves to the role language plays in carrying out activities, including the expression of inner states or internal reflections, thought and the use of knowledge. Mathematics for instance, as W. points out, is knowledge but is *also* an activity. The interest shifts to the activities in which language is used and the social and conventional aspects of language games.

5.20 Inner states

DP is strongly characterized by its endorsement of an action oriented view of language. The rejection of "cognitive" social psychology lies in a frustration with unspoken assumptions within the discipline: that language is a transparent tool for moving from the form to the content, from surface expressions to inner states, attitudes, beliefs and so on. This view of language overlooks the activity within which a response is

produced, the language game inside which utterances are produced. In a post-Wittgensteinian model it is impossible to capture meaning unless we know what participants are doing, what the rules of the game are; there is no meaning other than that which emerges in the course of the activity by virtue of the rules followed by the players. Expressions of inner states in this perspective are not treated as the external reflection of the inner state but rather as the thing itself, the only available datum, not the symptom of some hidden element that constitutes the object of attention of the researcher. When we say something like "I have the conviction that" or "I have the intention to" we are not reporting an inner state; rather we are arguing, requesting, describing, and most of the times we are trying to convince someone. We risk being entranced by words, taking the objects in these expressions as things that exist by themselves and failing to recognize these expression for what they are: ways of talking. Psychology is particularly prone to fall for this sort of mirage, for its data are often "reports of inner states." As a consequence psychologists are subject to this type of bewitchment. We may start believing the metaphors we have developed in natural language to manage things we do not see. Then we are tempted to talk about 'attitudes', 'beliefs', 'representations', 'prejudices' as if they were apples and pears that we hold in our pockets and can pull out and display on demand. Paradoxically, the development of sophisticated brain imaging techniques has worsened the delusion of being finally able to access people's minds to *see* 'desire', 'sadness', 'happiness' as images of activated neurons on a computer screen (Uttal, 2001). However, we still rely on the verbal report of subjects to tell us what they are feeling at the moment their neurons produce a certain image on the computer screen. The received take on inner states has also a methodological explanation. Natural sciences use numbers and have countable results. In order to count something it is essential to isolate units of analysis. Perhaps the whole notion of the existence of "inner states" should be approached in a different way.

5.21 The status of inner states

The handling of the subject of inner states is central to my perspective. Wittgenstein's reflections on the subject illustrate what I find a useful perspective on how to treat the expression of inner states, including the voicing of attitudes and opinions toward food biotechnology.In a way relevant to the polemics between SRT and DP, Wittgenstein criticizes how Psychology treats psychological states. He states that Psychology can only access external expressions of feelings and attitudes and emotions, and that

> 580. An 'inner process' stands in need of outward criteria
>
> Wittgenstein (1958)

W. is interested in the status of inner feelings and how to deal with them. His remarks are about the inaccessibility of inner states without the contribution of the expressions of them. Introspection and inner dialogue show that we do have inner states. Obviously it is not the case that if I am in pain but I am not expressing my pain then I have no pain, that if I don't express my fear I have no fear. This would be contradicting everyday experiences, as van Dijk points out. When W. writes

> 580. An 'inner process' stands in need of outward criteria

his point is *not* that there are no inner processes without outward criteria, rather that we have no means to access inner processes other than through some outward criterion. This point refers not only to the level of interpretation of another person's inner states. Most relevantly it applies to the manner in which I am capable of expressing my own inner states. The only ways I can express my inner feelings is through the linguistic and non linguistics tools I have available to me, usually those I have been socialized into. The problem is that inner states are not something we 'have' even if this is how we express ourselves in ordinary language. It is

not that I have hope the same way in which, for example, I have a bicycle, or a degree, or red hair. But this is only part of the problem.

> 584. Now suppose I sit in my room and hope that N.N. will come and bring me some money, and suppose one minute of this state could be isolated, cut out of its context; would what happened in it then not be hope? – Think, for example, of the words which you perhaps utter in this space of time. They are no longer part of this language. And in different surroundings the institution of money doesn't exist either. A coronation is the picture of pomp and dignity. Cut one minute of this proceeding out of its surrounding: the crown is being placed on the head of the king in his coronation robes. – But in different surroundings gold is the cheapest of metals, its gleam is thought vulgar. There the fabric of the robe is cheap to produce. A crown is a parody of a respectable hat. And so on.

W. insists on the fact that entities such as "dignity" only exist in a social world as part of a social practice and that they acquire their meaning from the general rules that hold for that particular game. There is no such a thing as "pomp" or "dignity" without the overall social, conventional apparatus in which notions of "king" and "crown" have a meaning. The fact that we can talk about "pomp" and "dignity" in a way that appears similar to the way in which we can talk about apples is the result of the inefficiency of our grammar. Because we have no better way for talking about inner states, we use the instruments we have, but it is a mistake to assume that such things *exist* in the same way as my bicycle does. The imperfection of our linguistic means leads to a mistreatment of inner states in psychology. Psychology is modeled on natural sciences, but its objects are often observable only by virtue of the narrative or of the behavior of the subjects observed.

5.22 Discursive Psychology and the dialogical version of Social Representations Theory.

Proponents of DP have engaged in articulated and repeated criticisms to the theory of SR (Potter & Litton, 1985; Litton & Potter, 1985; Potter & Billig, 1992; McKinlay, Billig, 1988; Potter & Wetherell, 1987, 1988) which have generated replies ranging in tone from dismissive to severe (Moscovici, 1985, Moscovici & Marková, 1998, Marková, 2002). It appears to me that over the years supporters of DP have gone back again and again to criticizing, commenting and discussing SRT as illustrative of shortcomings that affect all of Social Psychology. I also think that such unbroken interest originates from appreciation for SRT as a genuinely socially oriented framework that should live up to the centrality attributed to communication by Serge Moscovici. This is at least what I claim in this work, and this is what is keeping me interested in both frameworks. The main criticism is that the processes of anchoring and objectifying are perceptual-cognitive and thus ultimately located at the individual level. Social Representations are ways of understanding the world which influence action but are not themselves part of action. (Potter, 1996: 168). Conversely, within SRT the analysis of discourse has been considered a useful methodological complement for the analysis of Social Representations (Flick, 1998; Moscovici & Marková , 1998: 246). Accusations of 'cognitivism' have been dismissed in light of the centrality the theory of Social Representations assigns to the communicative process and to everyday discourse. Social Representations develop thanks to communication, understood as everyday informal conversation and chatter. In response to accusations of "perceptualism" and "cognitivism" Marková insists that Social representations have a "holistic nature" (Marková, 2001: 232) and that thinking is inherently dialectical. The dialogical and dialectic theory of SR as described by Marková offers a theoretical embrace that extends from Hegelian dialectic to the works of the Bahktin circle. Marková offers a central contribution to the rediscovery of an essentially dialogical

version of SRT . In the words of Marková Social Representations Theory conceives

> the dynamics of thought, language and social practices as interdependent socio-cultural and individual phenomena which are co-constructed by means of tension and polarization of antinomies
>
> *(Marková, 2000: 419)*

The theoretical discussion of Marková develops the richness of SRT in the direction of dialogism. Edwards and Potter write that "representations are mostly treated as cognitive structures or grids that make sense of information, particularly about unfamiliar social objects" (Edwards and Potter, 1999: 449). According to Marková, Edwards and Potter broadly misunderstand the theory, which is not based on 'perceptual cognitivism" and "information-processing". In particular, Marková insists on the influence of the Bahktin circle and on the resonance between the notions of genre and dialogism with the dialogical epistemology of SRT. However, the works of Bahktin, Medvedev and Volosinov are never quoted in methodological and empirical studies in SRT. Indeed, except for Marková, they are virtually absent from the reference lists of studies on SR theory, including recent sizable and exhaustive presentations of the theory (see Wagner & Hayes, 2005). In the same line, Voelklein & Howarth (2005) state that accusations of "cognitivism" originate from a mistaken conception of the notion of cognition within SRT. The authors clarify that one of the central aims of SRT is to "reconstitute the essentially socio-historical nature of cognition"(p.442). In agreement with Marková they argue that that within SRT,

> [c]ognition is based upon a dialogical understanding of the mind that is rooted in a Hegelian paradigm and the tradition of dialogism (p.442).

and that:

> Social Representations theorists regard cognition as socio-cultural, as dynamic and, hence, as something that cannot be simply reduced to the level of the individual (p.443).

In respect to criticisms to the allegedly cognitive nature of the processes of anchoring and objectifying Voelklein and Howarth state that:

> The processes of anchoring and objectifying are not "purely cognitive", they "are indeed social, cultural and ideological as much as cognitive" (p.441).

And finally that:

> The theory seeks to integrate culture and cognition, which is "*inherently* and *inevitably* social and cultural"[emphasis in the original]. (p.443)

There is then a lively convergence of recent theoretical studies in SRT that focus explicitly on dialogism. From a dialogical perspective, they argue, cognition is not individual and is not oppositional in respect to action. Marková's reflections on social representations show an important affinity between the project of SRT and Billig's (1997) discussion of discursive and ideological messages. However, her dismissal of the criticisms moved to SRT from discourse oriented scholars is not entirely convincing. Marková does not address what seems to me to be the relevant criticism which has been raised by discourse-base approaches. Despite the richness of Moscovici's writings the corpus of studies in Social Representations pays little attention to the sorts of "texts" which constitute the very kernel of social knowledge production: the texts of everyday interaction and arguments as they occur in natural settings. For instance if Social Representations are rooted in a dialogical model of communication, they can hardly be captured in a multiple choice survey. Surveys entail a propositional and perceptual model of communication. Surveys collect individual responses and then sum them up into collective responses, which are then correlated with social variables. Surveys artificially constrain the "interactive texts" that can occur. Further, objectifying and quantifying "answers to questions" imposes an ordering, an atomization, and a reification onto the resulting

interchanges. Lastly, a survey assumes from the very start that there are "ideas" or "attitudes" hidden inside individual brains which can be, directly or indirectly, measured by using such an experimental 'probe'. So there is virtually nothing left of natural interactive processes once all has been reduced to a survey and its "results". On the other hand, in the midst of real interaction the reverberations of the many voices present in a given society exhibit a multi layered complexity and depth. Bahktin's key reflections about language and genres focus particularly on how secondary genres like novels are derivative of a whole range of other speech activities. Everyday talk energizes current ideas and finds its way in literary genres, thus re injecting itself in the life of society. While the centrality of everyday discourse and communication for understanding social knowledge has been established by Moscovici from the very beginning, studies of SRs largely don't engage with the theoretical and methodological implications for the theory. Not enough effort has been made to utilize the theoretical reflections and methodological instruments developed within cognate disciplines. Language within SRT is often seen as a route to the concept, as a way of representing the idea that lies behind it; like a picture or a drawing, a depiction, an arrow that takes us from the surface to the content. In most social psychology research speech and dialogue are examined for content, as a guide to orient the researchers to develop hypotheses and questionnaires that then generate the 'real' data, countable items that look like the ones available to 'hard science'. This transformation inevitably fosters a misperception that hides the indirect and problematic nature of discursive data.

5.23 Discourse as a tool for what?

DP leaves unresolved a fundamental conflict between the actual discourses generated by individuals on some topic of immediate concern to them and wider sociological facts at some supra-individual, non-local level. Within DP, the explanation of a person's account is limited to the social aim of the interaction. No attention is dedicated to wider social

aims of the individual beyond the immediate interaction. Sooner or later analysis must shift from a locally produced and motivated account of a phenomenon to some other level of recurrent, articulated, and socially anchored position-taking. This can be the level of culture or ideology. DP's notion of a chameleon-like, strategic and ever opportunistic subject generates difficulties. Within DP, discourse is programmatically treated as a tool for carrying the current conversation forward in a socially positive manner. Neither what participants think or the wider consequences of their discourse is discussed. I take a wider view on the functions that discourse has in social interaction. Discourses offer particular perspectives and support one particular perspective on events. They thus go beyond the immediate interpersonal needs of participants, to lend support to large-scope scenarios which have consequences beyond the immediate context of the discourse itself. DP scholars are obviously concerned with real life issues and with the role of discourse in large-scale social phenomena like racism (Wetherell & Potter, 1992). Still, the theoretical principles of the discipline make difficult the leap from the micro-level of interaction to a broader social perspective, if, indeed, these two levels are mutually interdependent. There is one further issue. The relativist posture of Discursive Psychology is problematic. If research is to ground social critique and help justify positive change, researchers must acknowledge a relation between what people say and what we might call the reality of social facts. Severing discourses from cognition on the one side, and from the "out-there-reality" on the other might turn out to be a trap. Such danger is clearly not avoided by dismissing some discourses, particularly hegemonic discourses, as strategic manoeuvres, while regarding dissident or subaltern discourses as more authentic. Discursive Psychology wants to recognize the creativity and autonomy of human subjects, seeing them as protagonists rather then guinea pigs showing 'symptoms' to the researcher. At the same time, it seeks to be a critically engaged discipline which can have an impact on reality. However, if we treat people's discourses only as strategic action, paradoxically, we run the risk of torpedoing the politically engaged rationale of the analysis of discourse (Burr, 2003).

Relativism, while a popular epistemological position for discourse analysis, may have the unwanted consequence of reducing subjects to strategists, self serving narrators. This perhaps is the reason why works in critical discourse analysis tend to focus on the discourse of those analysts disagree with rather than on the discourse of those they agree with. The relativist viewpoint seems particularly appropriate for a study like mine, where the stories of scientists, activists, lay people and politicians produce a tapestry of accounts that frame food biotechnology from different perspectives. Truth is in some sense irrelevant here, and it can be safely left out of the research question. However, I would feel very uneasy to apply the same programmatic relativism to my data if I were analysing racism, inequality, or violence, where there are victims and perpetrators, and where opposing parties usually have incommensurably different resources for making their voices heard. In these instances I would find it hard to accept that the voices of discriminated, victimized participants are framed as merely opportunistic (“doing being the victim of rape” for instance) generated by the endless mutations of the paper-thin strategic self Discursive Psychology seems to hypothesize.

5.24 Conclusion

In this chapter I have described the main tenets of SRT and of DP. I have also illustrated the criticisms advanced against the two frameworks by various scholars. The criticisms are part of a longstanding debate between the two paradigms and constitute a relevant chapter in the ongoing discussion over the scope and epistemological foundations of Social Psychology. I have given my perspective on shortcomings within Social Representations research, and I have explained why I find DP a useful perspective on the study of Social Representations. The contradiction remains unresolved, and some may judge that the two approaches I use are not compatible. As the empirical part of this work will show, my analysis largely follows principles of Discursive

Psychology. I place much emphasis on how certain representations of GMOs are produced in context and on which interpersonal and strategic aims they serve in a given interaction. However, while studies in DP programmatically ignore the underlying beliefs that may be linked to certain expressions, I am convinced that some account of ideology as articulated cognitive structures is necessary in order to explain the regularity and predictability of individual responses. Discourses of biotechnologies that I have analysed show recurrent arguments that lead to support or rejection of GMOs on the basis of beliefs, either implicitly or explicitly present in conversation, with a relevant ideological dimension. Legislation, mass media and recorded conversations show the emergence of ideologies that stipulate the roles of scientists, politicians and lay citizens in the decision-making processes related to food biotechnologies. These data suggest that ideologies play a part in the positions people take, whether they support or reject food biotechnologies. After reviewing the dialogue between SRT and DP, I still hold as essential the emphasis on the world-shaping power of social representations. The discussion on inner states constitutes my response to the criticisms advanced by van Dijk against Discursive Psychology. I agree with van Dijk and Moscovici that "a discourse is not a representation, even if every representation is translated into discourse"(Moscovici, 1985: 92). van Dijk's objections to the "reduction to linguistic repertoires" suggest the theoretical importance of engaging with the concept of mind and inner states rather than leaving them aside. Recent studies have focused on talk and cognition from the action oriented - "talk without a mind" - approach (Heritage, 2005, te Molden & Potter, 2005) and show that there is an ongoing debate between mentalist and anti-mentalist approaches to language and communication. Van Dijk's criticism of the notion of 'repertoire' underscores the importance of clarifying the analytical concepts of DP. Where, if not in the mind, do learned verbal and communicative resources and strategic arguments 'live'? Wetherell and Potter (1992) describe repertoires as figures in the moves of a dancer, the enactment of a competence, something a person can perform over and over again with infinite variation, very much like

what happens with the grammar of a language we master. Obviously such capacities depend on the brain/mind. Still, this does not mean that we shall treat thoughts as things that are held in the mind, most likely in the form of propositions. My position is the following: inner states, like pain, hope, prejudice or even the 'holding' of a certain view of biotechnologies clearly 'exist' even when they are not expressed and thus made visible, embodied in some behavior, verbal or otherwise. However, such inner states are not *there* the same way as apples and pears on a plate are, even when we cover them with a cloth and thus cannot see them. Inner states not only *become visible* when they are expressed, like an apple when it is in sight, they are *produced ad hoc, for an audience,* within the frames socially and culturally available to participants. Further, opinions are performed within a certain course of action, in the context of a social encounter, with certain scopes and within a given social setting the rules of which are partly set and partly negotiated by participants. Outside such situated performances, opinions and attitudes are not only inaccessible to the psychologist (or to anyone else) but impossible to isolate at all. Thus attitudes and inner states are inherently social and need to be understood as elements of interaction, moves within a social encounter. Ultimately the aim of my analysis is not simply to collect rhetorical devices subjects use to render their version of the biotechnology story more realistic, or to defend themselves effectively during a given interaction. The success of the analysis depends on making visible the ideologically loaded frame which supports the assumptions speakers display, and to make more visible the implicit stance that renders natural and obvious the positions taken by participants. The data will show how ideologically loaded remarks are traded in a public setting and how sometimes they are challenged, other times they are welcomed by a collective laugh or simply reinforced by silence. As Bourdieu wrote, "The most successful ideological effects are those which have no need of words, and ask no more than complicitous silence." (Bourdieu, 1977: 188). A certain view of capitalism, technology, of the United States, of scientists, of the lay public, and the role of food in Italian culture are key to understanding why people

express themselves as they do when it comes to GMOs. A close analysis of text is one way to move from the locally performed and negotiated position taken on a topic like GMOs to a wider set of assumptions which support and sustain those positions. Despite the theoretical minefield underlined by van Dijk, and the warnings voiced by Carla Willig (2003) and Vivien Burr (2003) within the Discourse Analysis framework, the core assumptions of Discursive Psychology are essential in this work, in particular its emphasis on the strategic nature of the expressions of inner states and its rejection of a "picture theory" of verbal expression.

6 HEURISTICS FOR THE ANALYSIS OF DISCOURSE

6.1 Features of discourse

In order to illustrate the methodology I propose I shall make use of a fragment of recorded interaction. Analyzing a transcript allows me to show in practice the language-oriented tools I use to approach discourses of food biotechnologies. The extract is a verbal exchange between a citizen and a professor, part of a public debate that occurred in a small village in the north west of Italy. The debate focused on a nearby field trial with genetically modified rice. There were about seventy people present, among them experts, politicians and citizens.In the transcript "S2" is a citizen in the general audience, and "L1" is a professor of biotechnologies who came to the meeting as representative of the association of Italian biotech companies. Two other persons briefly take part in the exchange: "S1" is another citizen in the audience (a woman); "Sindaco" is the village mayor. At lines 1-10 S2 takes the floor after the contribution of scientists, politicians and other citizens. The sentence "Americans have been eating transgenic stuff since nineteen-eighty-four" quotes an earlier statement by the scientist who is conducting the experiment. The scientist does not participate in this particular exchange.

1	S2;	allora premesso che se è dal:'ottantaquattro
2		quanto diceva lei che gli americani mangiano =
3		=transgenico
4		a me- me- non me può,
5		importar di meno,

as a premise I say that I could not care less if it is the case that, what you said before, Americans have been eating transgenic stuff since ninety-eighty-four

quello che mi da molto fastidio è che i signori =
=americani
dietro, (.) vari:, paraventi,
(.) son-
ci hanno sempre usato come terra di =
=colonizzazione,
but what bothers me very much is that gentlemen Americans, behind various covers, are, have always used us like a colonization land

perche non mi dica professore
che tutte le varie sementi che abbiamo
qui vengono da- da ditte italiane,
because don't you tell me professor that all those various seeds that we have here come from Italian companies

L1; nho: sentite posso posso tentare di fare:,
no, listen, can I, can I try and make an…

un u: u::,
[ ]
S2; no no non sto-
non la sto accusando eh=
no no I am not, I am not accusing you

L1; =no no no he:
proprio per carità io poi:
ripeto:,
please please, then I...

[
S2; cioe sul fatto del-
delle biotecnologie per il mio lavoro,
sono fondamentali
<perchè servono a portare avanti la salute della =
=gente>,
I mean about biotechnologies, they are fundamental for my work because they are useful to further people's health,

hh queste altre cose che hanno:,
(1)
vorrebbero portare:,
la salute il cibo: alle popolazioni
dell'africa <e nostre anche>,

those other things that they have, that they would like to bring food and health to African populations, and to our populations too,

h ma dietro leggi dei soldi americani:,
but following the laws of American money

che mettono in mezzo:
who mix up,

quelli venderebbero anche la madre per poter far =
=denaro,
<tra virgolette> hh per cui,(.)
those would sell their own mother to make money

poi qui il fatto che queste sperimentazioni vengano,
(.) nasco-
o perlomeno,
nascosti dietro delle pieghe,
then the fact that these experiments are hidden, or at least hidden behind covers

<che uno dovrebbe spostare queste pieghe per =
=vedere che ci sono>
perché in effetti ci sono le cose
one should move those covers in order to see, because in fact things are out there

L1; sentite ( )
diciamo io credo che ( )
e::: l'ha detto prima il collega diciamo non =
=viviamo di slogan
listen, I think that, the colleagues said this before, let's not think in slogans

S2; no non stò:,
no no I am not...

L1; oggi come oggi i proprietari di queste tecnologie sono europei
non sono americani
la più grande concentrazione di nouau =
=biotecnologico oggi sta alla baier,
che è diciamo le-,

as of today the owners of these technologies are Europeans, they are not Americans. The biggest concentration of biotechnological know how is at Bayer, which is let's say

queste grandi multinazionali non sono di
nessuno sono degli azionisti,
these large multinationals don't belong to anyone, they belong to the shareholders

hh io vorrei che ri- h ritornassimo a un
mio a un modello no,
diciamo che abbiamo gli agricoltori che
sono degli imprenditori,
I would like to go back to my, to a model right, let's say we have farmers who are businessmen

hh e ci sono delle altre imprese no quasi
tutte multinazionali
che forniscono i mezzi tecnici agli,
agricoltori è così credo da moltissimi
anni,hh siete,
gli agricoltori come imprenditori sono
clienti,di chi produce tecnologia.
and then there are other companies, almost all multinationals, which provide the technical tools to farmers. It has been this way for many years. You are, farmers, as businessmen are customers of those who produce technology.

la tecnologia normalmente è tecnologia
chimica,hh tutti gli anni ci son dei nuovi
fungicidi dei nuovi pesticidi e via di
seguito,
The technology normally is chemical technology, every year there are some new mould killers, new pesticides and so on

tra le altre cose,
hanno sviluppato anche qualche pezzo di
biotecnologia,
among other things they have also developed some piece of biotechnology

vorrei ricordare qui che sono solo
quattro le piante coltivate,
in modo significativo nel mondo sono
mais la soia il cotone e il colza

I would like to recall here that in the world the plants that are significantly cultivated are only four. They are corn, soy, cotton and rapeseed

di questi l'unica che interessa l'Italia =
=sostanzialmente è il mais
perché gli altri tre sono di fatto non sono
coltivati esiste quindi una-,

and the only one which interests Italy is corn, because the other three as a matter of fact are not cultivated. There is then a,

(.)
il fornitore di mezzi tecnici che ha
offerto al mondo dell'agricoltura
sono tutte multinazionali e quindi a tutti
gli agricoltori del mondo
una nuova tecnologia hh

the provider of technical tools which has offered to the world of agriculture, they are all multinationals so ((they offer)) a new technology to all the farmers of the world

che è stata accettata dagli agricoltori
americani in particolare i coltivatori di
soia,h perchè quelli di mais s: sono così
così,

((a technology))which has been accepted by American farmers, in particular those who farm soy, because those who farm corn ((accepted it)) so and so,

gli agricoltori europei per loro motivi =
=apparentemente non la accettano.
non non è niente di male non è mica una
tragedia =

European farmers, for their own reasons, apparently don't accept it. There is nothing wrong, it is not a tragedy

=(.)
diciamo sta al colt- il riso,
è ancora molto lontano il riso
transgenico,
h ma sta ai coltivatori di riso,
di sapere quanta tecnologia ci sarà nel
loro avvenire.

let's say it is up to rice farmers, transgenic rice has still very far to come, but it is up to rice farmers to decide how much technology there will be in their future.

hh quando diciamo è comparsa la meccanizzazione
poteva essere rifiutata:
ma voi oggi vi immaginate le mondine nelle risaie?
When let's say mechanization came about, it could have been refused, but can you imagine the rice-pickers in the rice fields nowadays?

allora la tecnologia ha avuto degli investimenti tante cose
At that time technology had investments, many things

quindi le biotecnologie agricole possono essere accettate o rifiutate
però diciamo sono i conti di un imprenditore,
((omissis))
so agricultural biotechnologies can be accepted or refused, but in the end these are the calculations of a businessman

vede io vorrei spendere una parola da:,
di buon senso
((omissis))
hhh quando noi mangiamo il transgenico:,
di diciamo chiunque di noi mangia alcuni grammi =
=di geni tutti i giorni,
(.) con la sua dieta normale,
you see, let me add here a word of common sense, ((omissis))when we eat transgenic food, let's say anyone of us eats some grams of genes every day with one's normal diet,

hh io mangio insalata da vent'ann- da ettant'anni =
=e non sono verde,
hh quindi diciamo non è che i geni: passino =
=nell'organismo umano,

hh in modo automatico,
I have been eating salad for twen-, for seventy years and I am not green, so let's say it is not that genes pass into human organism in an automatic way,

dal punto di vista dell'alimentazione,
hh un una transgenesi,
n fatta nel mais che poi viene mangiato
dall'animale e via di seguito,
la probabilità che faccia male è nulla!
(1)
non so se ve ne rendete conto,
(0.5)
non è, non è un: un veleno
when it comes to food, a transgenesis done in corn that then gets eaten by the animal and so on, the probability for this to be harmful is null!!! I don't know if you realize that!! it is not- it is not a poison

[
S2; ma allora di cosa discutiamo?
[
what are we talking about then?

S1; ma io non mi fido di lei,
(.)
mi scusi,
((ridendo)) io non mi fido:,
but I don't trust you, sorry, ((laughing)) I have no trust

[
Sin; però professore,
io credo:,
((omissis))
but, professor, I believe that,

This verbal interchange contains some articulate representations of food biotechnologies. It offers them in the complex and multilayered way in which they usually surface in day-to-day communication. The citizen and the professor propose two contrasting perspectives: after reading the transcript we know that for the former food biotechnologies are negatively characterized while for the latter they represent progress. However, an appraisal of the overall sense of the two opposing perspectives falls short of explaining how the representations are

constructed and what confers on them such characteristics as factuality and persuasiveness. Further, the ideological aspect of the representations may be lost if we simply extract the pros and cons from the opposing discourses. I argue that the content of the representations proposed cannot be detached from the situated, linguistically dependent performance of the accounts which construct these ideologically opposing discourses during the conversation. Representations amount to the performance of discourses the compelling quality of which largely relies on their linguistic properties. The animated exchange, which was filmed and transcribed, on paper does not offer the richness and the complexity of a live interaction, in which gesture, intonation and a countless number of visual cues affect the overall realization of the conversation. However, it still retains a sense of how communication unfolds and how arguments are built and traded within interaction. In what follows I illustrate a number of structural and language-dependent categories of discourse with particular attention to how they can be put to the service of ideological understandings of the food biotechnologies phenomenon.

6.2 Theme

Themes are the general issues under discussion. Theme is any broad subject: “Finnish design”, “child rearing”, “immigration in Europe,” “Italian politics”. All data in this study refer to the same umbrella theme “food biotechnologies”. From newspaper articles to informal chats recorded during a protest march, all the discourses and texts collected belong to the same blanket argument. The conversation above falls under the general theme of food biotechnologies.

6.3 Topic

Topic is a semantic macro structural feature of discourse; narrower than theme, the topic tells "what a discourse is about" (van Dijk, 1998). The category is not linked to the linguistic surface of text or talk; one can address a topic in any given manner. The notion refers instead to the content of a discourse. The "food biotechnologies" theme encompasses many topics; as an example, a few of those identifiable in the data are: "risks associated with biotechnologies", "unnaturalness of biotechnologies", "patenting of living organisms", "food related allergies", "the role of multinational corporations in the diffusion of biotechnologies", "contamination of fields by GM seeds", "Italians' attitude toward biotechnologies", "advantages of biotechnologies", "third world hunger", "scientific progress". The ideological function of discourse topic is of wide significance. Given one theme, in this case food biotechnologies, participants in a social encounter or editorialists writing for a newspaper can address the topics they find most relevant. Topics are not equivalent to one another for they carry evaluative elements which contribute to the overall appraisal of the theme. The choice of one topic as opposed to another already displays the inclination of the participant in respect to the issue. For instance, if someone chooses to talk about the "advantages of biotechnologies" rather then of the "risks of biotechnologies" it is likely that they are inclined to emphasizing advantages over risks and in their discourse they will call attention to the former over the latter; they thus provide an overall positive depiction of food biotechnologies via topic selection. By the same token, choosing to talk about the Catholic Church's approval of food biotechnologies, is likely to "gain points" in favor of food biotechnologies, at least among those who accord some authority to the Catholic Church. However, topic choice by itself does not identify the stances expressed by an article or within a discussion. A topic can also be selected by a participant with the aim of targeting in a polemic way the related claims brought forward by adversaries. A person can raise a theme of conversation only to contradict the claims which are related to

it. In the above example at lines 1- 5 the citizen reintroduces--but only in order to refute it--an argument that had been used earlier by the scientist responsible for the field trial trial. “I could not care less” at line 4-5 clearly does not express lack of interest; rather it challenges the relevance of the claim made earlier by the scientist that Americans have been eating GMOs for years. Against the implication that GMOs have been used with no harm for a long time, the citizen opposes another topic. The alternative topic is polemically suggested as being more relevant through the adversative clause “but what bothers me very much” at line 6. The citizen wants to talk about the economic control that according to him the U.S.A. has had for a long time on “us” (“they have always used us like a colonization land” at line 10-11), and he proposes this economic/political relationship as the core of the issue, the central topic. The negative view of GMOs which emerges from this contribution (lines 1-14) is apparent from several linguistic cues. Principally, the speaker describes as a relationship of colonizer/colonized that between “Americans” and “us”. According to this view GMOs are imposed on “us” by a colonizing force. The first person plural accusative pronoun apparently refers to “Italians”. At lines 57- 99 the biotech professor proposes his own perspective. “I would like to go back to my- to a model, let’s say we have farmers…” The “model” proposed downplays the political role of economically powerful companies and instead depicts a world in which everybody is free and the market is naturally regulated by it’s own rules. The theme remains the economics of adopting or refusing GMOs but the discourse is very different. At lines 109-129 the professor changes shfts the focus to the dangerousness of GM food, a topic dear to detractors of food biotechnologies; however, he does so only in order to claim that GMOs are not dangerous (“the probability for this to be harmful is null!”, line 125) Topic setting is of great significance in the media. In newspapers the topic of an article is introduced by the headline. With the limitations I mentioned, the title often supplies -either explicitly or inferentially- information on the stance taken by the author.

I list some examples of Italian titles which both set the topic and express stance:“Blessed GMOs” (“OGM Benedetti”), (Baget Bozzo, 2003) is

fairly explicit. Very explicit is also the title “Pregiudizi errati: anche noi siamo OGM” (“Wrong prejudices: We too are GMOs”) (Messaggero Veneto, 16 November 2003) summarizes the main point of the article. Consider also: “GMOs are among us” (“Gli OGM sono tra noi”), (Verga, 1999). Here the title hints at a B movie about zombies and alludes to an invasion of GMOs. The expression creatively bestows on GMOs a number of negative characters by associating them with the living dead.

6.4 Polarization

Ideological discourse focuses on controversial matters and has a fundamental evaluative dimension (van Dijk, 1995). These two characteristics combine to produce strongly polarized narratives that construct groups and objects related to the given subject as in opposition to one another. GMOs are often constructed as the opposite of both organic and conventional products. GMOs are “bad” while organic or “traditional” products are “good”. This opposition is so widespread that it is taken as the starting assumption of social psychological studies trying to correlate attitudes toward GMOs with other variables (Dreezens & Others., 2005). Polarization encompasses objects and protagonists, and it sometimes creates the typical in-the-trenches tone of propaganda talk. In the fragment above, the citizen at lines 1-11 offers a radically polarized narrative in which “we” are being “colonized” by “Americans”. The account clearly proposes an “us” ingroup, probably corresponding to “Italians” opposed to “them” outgroup (Americans). Polarization in this instance underlines the opposite interests and values of two groups, which are represented as standing in a relation of oppressor/oppressed.

6.5 Lexicalization/reference

The act of reference must fulfill two somehow opposing functions: efficiency and exhaustiveness (Sacks & Shegloff, 1979). On one hand, a referring expression must point to the referent in an unequivocal way; on the other hand it ought not to be redundant or lengthy so as not to affect negatively the communication. The choice of the referring expression is then always a compromise between two competing requirements. This holds for reference as a phenomenon essential to the communicative process. Reference though is not only the way entities are identified for the purpose of information exchange, rather it plays an important part in the social practices involved in any kind of interaction. Social actors involved in a communicative activity, whether writing a newspaper article or discussing with interlocutors, always have multiple purposes; successful pointing to the correct referent is clearly one aim in communication but it is always joined by rhetorically informed agendas: convincing the audience, defending an argument, construing as factual a certain storyline. For each entity in a universe of discourse a participant has to select an appropriate referential expression or formulation. Because it is always the case that one can refer to the same thing in several ways, while referring the speaker also provides some information about how she places herself in respect to the referred item. What S&S call "referring simpliciter"--that is, "referring and nothing else" or referring in a "basic" and "neutral" way--is largely not achievable; it has been argued that referring is always "dupliciter" (Haviland, 2005) because it is not possible to refer without also expressing stance, that is, displaying in some respect the relation that links the speaker to the referred item. Reference actually displays a relationship between each interlocutor and referent, and between interlocutors themselves (Haviland, personal communication). In other terms, the act of reference is one of the many ways in which positioning is performed. The case of courtesy pronouns in Italian (the formal "voi" and "lei" as opposed to the more intimate "tu") illustrates how in this language one cannot perform reference to a co-present person without also providing some information

about the relation the speaker has toward the referent along the axes of power and solidarity (Brown & Gilman, 1960). Pronouns can convey not only positioning but also stance. Consider, at line 34 of the transcript "those would sell their mother…". The choice of the pronoun, over the default "they" adds to the critical nature of the remark. Using "those" implies that the object of reference is distant from the speaker. In this case, the distance is not spatial but metaphorical; it marks an incompatibility between two ways of thinking. Van Dijk (1995) notices that "distancing" through the use of pronouns is a feature of some ideological discourses on immigration and is used to mark the "outgroupness", the alien nature of immigrants. In the case at hand the choice of pronoun further shows that the speaker finds the behavior he ascribes to Americans uncanny. Pronouns are not the only referential device of course,. Lexical choice is ubiquitous and so is its stance-displaying nature. No type of communicative act is free of this character, including scientific reports. In the above extract for example, I had to decide how to refer to the different participants, and I had several options: the person I refer to as the "professor" in the transcript is certainly a professor but could have also been referred to as "professor of biotechnologies" or, given the fact that he was at the public encounter as a representative of the Italian association of biotech companies, as "Assobiotec representative". The latter definite description for instance would be likely to underline his interested position in everything he says. Those I refer to as "citizens" could also be identified as "lay people" or "members of the public". These referring labels are not equivalent. Given the context in which the action takes place--a debate on a field trial in the local village--calling participants "citizens" emphasizes their rights, compared to a term like "lay people" which might have put the accent on their lack of expertise, in contrast with the knowledge of the experts present . The choice of referring expression on my part then reveals a standpoint; from the very start of the analysis I implicitly position the speakers in some way. It is no surprise that one prominent form of expressing stance in discourse is the choice of wording or phrasing used to make reference. This is so much the case that for particularly sensitive

topics that have to do with discrimination there are “politically correct” ways to make reference, the result of careful and historically contested thought, precisely because some referential formulas are recognized to express and possibly reinforce prejudice. “Mentally challenged” as opposed to “retarded” or “visually impaired” as opposed to “blind” correspond to carefully chosen wordings substituting lexical items which carry with them a negative characterization of the given referent. Most, if not all terms of reference who describe a person clearly are not “ideologically neutral” themselves. Politically correct terms of reference for instance express an ideology that claims to be inspired by values of inclusion and equal opportunities.In discourse about genetically modified foods, lexicalization provides constant examples to illustrate that how a person refers to an object constitutes an evaluative categorization.

“Organismi geneticamente modificati” is in Italian the standard way of referring to organisms the genetic patrimony of which has been modified using biotechnology. Usually the expression provides little information on the standpoint of those who use it. “Organismi transgenici”, ‘Transgenic organisms”, arguably hints more explicitly at the fact that genes are moved, transferred from one organism to another. This term is used by opponents to mark the artificiality and the uncanny character of the resulting products. (See for instance Garrou & Others, 2001).

“Organismi giornalisticamente modificati” (“Journalistically modified organisms”) is how the scientist Giorgio Poli, a bold supporter of biotechnologies, in the course of a RAI TV program decided to refer to GMOs thus summing up his view of the distorted representation the media present of food biotechnologies. Journalists, in this view, not scientists are the ones who modify reality.“Genetically enhanced organisms” (Weckman, n.d.), though not an Italian example, is an explicit attempt to propose an alternative lexical description of GMOs, a term of reference which explicitly suggests that biotechnologies can improve organisms. . “Organismi Frankenstein” (“Frankenstein organisms”) and “cibi di Frankenstein”(“Frankenstein foods”) clearly carry negative connotations, evoking both artificiality and monstrosity , and also hinting at the hubris of those who create such products . “Geni

terminator" ("terminator seeds"), an expression inspired by the 1985 movie starring Arnold Swarzenegger, powerfully evokes the fact that with this technology plants can be made to produce sterile seeds. The expression refers to this trait as a death carrier, i.e. mortiferus; it was the brainchild of Pat Roy Mooney, executive director of RAFI, a foundation dedicated to the preservation of seeds. In 1998 the organization was struggling to attract the interest of the media on the new "terminator" technology. The catchy name bestowed on the invention, it turned out, was critical in the group's gaining wide public attention. (Charles, 2001: 218)The expressions cited refer to GMOs and to the technology which produces them; they show how wording can embed ideologically imbued positions and construct an entity as conforming to a particular viewpoint.
However, appropriate names for GMOs are only one facet of ideological discourses on biotechnologies encapsulated in referring expressions. As I have remarked, ideological discourses are characterized by the polarization of opposed factions. The scenario of narrated biotechnologies is populated by the social actors who play a part in the diatribe: scientists, the public, green activists. Partisan representations of friends and foes play an essential part in the making of opposed storylines on what food biotechnologies "really" are. Referential expressions and lexicalization in this case too prove to be a constant strategic discursive mechanism.Consider at lines 6-7 of the above extract, "gentlemen Americans" an expression with a clearly antiphrastic meaning, ironically critical of those who seem to impose biotechnologies on "us". Through the appellative "signori" Americans are implicitly qualified as rich and powerful but also as bossy and undemocratic. At line 7 in fact "colonization land" qualifies "us" as victims, passive recipients of invasion and long term exploitation at the hands of Americans. Other examples of ideological use of lexicalization include: "fondamentalismo scientifico" ("Scientific fundamentalism"), a phrase used by Pecoraro Scanio, ex Minister of the Environment during a RAI TV debate to refer to the attitude of scientists in favour of biotechnologies. The expression clearly embeds charges of short sighted radicalism and closed-mindedness attributed to scientists. "Battaglia

culturale" "Cultural battle" (Vieri, 2004) is how during a conference the representative of Italian Agriculture Association chose to define the ongoing legal struggle between multinationals and the Italian government on the matter of the commercial introduction of GMOs in Italy. "Un modello di sviluppo culturale" "A model of cultural development" is how the same speaker refers to Italian agriculture as a precious heritage under attack by multinational interests. "I pescecani come li chiamo io" ("Sharks, as I call them"), is how a farmer during a street protest refers to multinational companies producing GMOs. Further examples are "ecologismo ideologico" ("ideological ecology") (Baget Bozzo, 2003) and "scienziato imprenditore" (businessman-scientist"). All these expression carry ideologically relevant meanings which fit within a particular perspective on the food biotechnology debate.

6.6 Qualifications

Qualification is another lexically dependent manner used to characterize and thus to position members of the outgroup and of the ingroup: At line 34-35 in the example the citizen says "venderebbero anche la madre per poter far denaro", ("they would sell their own mother to make money"). The hyperbolic predicate obviously implies that Americans are not to be trusted because they are only after profit. From a very different perspective, at lines 59-60 the professor says "gli agricoltori che sono degli imprenditori" ("farmers who are businessmen"). The attribution in the relative clause fits in the "model" the speaker is offering to the audience: a reassuring scenario of a self-regulating ideal capitalism in which farmers are free clients that can accept or refuse GMOs. The description is offered as an alternative to the alarming picture delineated by the citizen, in which "we" are enduring "colonization". At line 83 the professor uses the noun phrase "il fornitore di mezzi tecnici" ("the provider of technical tools") to refer to the corporations which put GMOs on the market. The qualification is obviously in the same line with his "model": on one side "customers", on

the other providers of technology and by inference no reason to worry about the imposition of a technology for motives of profit. The scenario proposed using carefully chosen qualifications clearly opposes another in which "we" are the target of an invasion on the part of an untrustworthy agent.

6.7 Categorization

The classification of ideologically relevant items plays an important part in the management of stake in discourse. Van Dijk (1995, 1998) pointed out that ideological discourses on immigration in Europe often include the distinction between "good immigrants" and "bad immigrants". Once the distinction is made, actions advocated by supporters of strong policies against immigration are invoked not for the "good" but for only for the "bad" ones. In terms of stake management, to make distinctions can amount to a discursive strategy which protects the speaker from charges of holding a prejudiced and generalized negative attitude toward immigrants. Discourses of food biotechnologies interestingly present the same argumentative property, no doubt because they share with the debate about immigration the same controversial character and, for those participating in the debate, the same mutual accusations of prejudiced, interest-driven positions which ignore facts. In the GMO debate, "red"--that is medical--biiotechnologies are "good", while "green" ones--agriculture biotechnologies--are considered "bad" (Eurobarometer, 2000). As in immigration debates, speakers often use the distinction between "red" and "green" to argue that their criticisms of biotechnologies don't amount to generalized accusations but to well thought out, conscientious assessment. In sum, categorization is a tool speakers use to make their arguments less easy to dismiss.

There is an example of this rhetorical strategy in the conversation reported above. At lines 22-26, the citizen says that biotechnologies "are useful to further people's health" but then immediately contrasts these good biotechnologies with "these other things" which one can infer are

food biotechnologies. An analysis of the sequential position of the utterances shows that the citizen at that point was attempting to display a less oppositional or propaganda-driven position. His statements at lines 1-14 had prompted an adversative utterance on the part of the professor "no, listen…." (line 15), which is followed by the citizen's "no no I am not accusing you" (line 17-18), uttered in overlap with and thus effectively interrupting the professor. The citizen seems to try to defend himself from potential accusations of being unjustifiably aggressive; his utterance appears to be designed to protect the speaker's ritual face. Appearing too partisan and unreasonable in a discussion can diminish the strength of one's arguments. In the sequential context the distinction between good and bad biotechnologies serves the rhetorical aim of taming the stance expressed and helping to gain recognition for the claims made.

6.8 Metapragmatic descriptions

Metapragmatic refers to any characterization of a particular language use. A powerful way of positioning the interlocutor or a third party in discourse is to attribute to their actions a certain illocutionary force. Illocutionary force is the conventional effect of an utterance (Austin, 1975). In many languages, specific verbs, which Austin calls illocutionary verbs, have the peculiarity of performing the action which they describe when they are conjugated in the first single person of the indicative present. For instance, "I fire you" if spoken by the right person in the right context, performs the act of firing the "you" in question. Many times there is a single word which characterized the action of someone. Metapragmatic descriptions often occur when the talk of another person is summarized as amounting to the performance of some conventionally describable action. Certain words build upon the semantics of language to characterize actions. These words are often - but not necessarily – verbs which describe an action, (to complain, to whine, to argue, to comfort, to gossip). However, sometimes the

characterization can be more subtle. I report an extract from an interview in which a scientist says “Italians are terrified”. The scientist’s characterization of Italians is derived upon his assessment of their behavior (in this case how subjects responded to a survey on GMOs). However, there is not clear reference to a specific action, in this case the characterization is being affected by terror of GMOs. In other instances the metapragmatic characterization is more obvious. Reporting speech indirectly we routinely sum up someone’s words as amounting, for instance, to a complaint, a request or a criticism. Metapragmatic descriptions are a device to create dialogical oppositions in discourse: they attribute character and generate a form of voicing. Metapragmatic descriptions are found in reported speech in which the quoted talk of one party is embedded within the speech of another but also in indirect reported speech. As Duranti and Goodwin put it, “verbs of saying are ideal framing devices for expressing local linguistic ideologies and can thus be equally exploited by authors/speakers and analysts for getting at the interplay of alternative interpretations of text or talk.” (Duranti and Goodwin, 1992: 20) The notion can be extended to any description of someone’s communicative behavior, not only actual but potential. Metapragmatic descriptions are one of the ways in which the dialogic interplay of different discourses is achieved within one person’s talk.In the above fragment there are no examples of metapragmatic descriptions which make use of verbs of saying. However, there are a few instances in which participants qualify their own words or those of their interlocutor as amounting (or not amounting) to a particular action. At line 17-18, the citizen says “I am not accusing you”. In this case the metapragmatic description is used to qualify hisown previous words as *not* being an accusation. The move seems to fence off further reactions on the part of the interlocutor who was trying to take the turn (see Fele, 1991). At lines 64-67 the professor says “let’s not think in slogans”, which amounts to summing up the whole preceding contribution of the citizen as partisan trivialities. In this case the metapragmatic move characterizes the content rather then the type of action performed by the interlocutor. However, the production of partisan trivialities during a discussion does amount to a

particular type of behavior, even if no single verb, in Italian or in English, can univocally label it. At line 109 the professor says “let me add here a word of common sense” which introduces and qualifies his own following contribution as “common sense”: uncontroversial, intuitive, rational, and right. In this case too the description focuses on the content of the words the professor is about to speak, rather then the type of action he intends to accomplish. There are several further examples of metapragmatic description in the data. One scientist, while narrating a public encounter in which someone from the floor vociferously criticized him, said of a lady “ha cominciato a sbraitare” (“she started to squeak”). The term has a disparaging meaning. “Sbraitare” amounts to shouting in an uncontrolled and uncivilized way in order to blame or complain. The scientist then makes a direct quote of what exactly the “squeaking” amounted to, reporting that the lady, after having missed his explicative explanatory introduction on biotechnologies because she was outside the room smoking, had said “I am against GMOs and that’s it” . By describing the action performed by the lady as “sbraitare” the scientist diminishes whatever authority the person might have had and dismisses the criticism that were directed to him. The move amounts to a derogatory strategy. Consider also another example from an interview with a scientist: “non si puo’ dare un grande peso all’impressione di chi non possiede l’argomento” (“one cannot attribute a lot of weight to the impression of those who don’t master the topic”). In this case the interviewed scientist argues for a decision-making process on field trial which won’t include lay people. The scientist metapragmatically describes the assessments of lay people as “impressione”, and thus he implicitly undermines such judgment as superficial and cursory. This is a more subtle example. In this case “impressione” is not the description of an accomplished speech act. In this instance the scientist is not referring specifically to the discourse of one person or to one newspaper article which he sums up as amounting to impressions. Rather, he describes as “impressions” any contribution, potential or actual, that the general public might make to the decision-

making process. The discourses of uninformed people are thus framed as originating from a superficial appraisal of the phenomenon.

6.9 Evidentiality

The term indicates any strategy in discourse aiming to strengthen one's point of view through authority or argumentation. Speakers can be made accountable for what they say; thus they tend to provide proof for their beliefs, especially in conflictual settings where their claims might be challenged. Furthermore, providing evidence for one's position furthers one's argument and can make it more persuasive. Depending on the context, different evidence is required to support one's propositions. In informal chatting on trivial topics, vaguely referring to a piece of news seen on TV or to something read in the paper is usually considered good enough (see van Dijk, 1998). In scientific contexts the requirements are different, and evidentiality is achieved through more structured protocols of authority and proof. In situations where participants are opposing each other and have conflictual perspectives, providing evidence can be one way of challenging claims and making points over the adversary (Fele, 1992). Also, evidence in such contexts is more liable to rejection. At lines 1- 3 of the above fragment the citizen refers to the claim, made beforehand by the scientist in charge of the field trial, that "Americans have been eating GMOs for the last 10 years". The argument made by the scientist is an evidential move. The scientist clearly wanted to make the point that GMOs have so far been harmless and was attempting to provide some evidential support to his claim. He did it by stating, implicitly, that nothing bad had occurred to Americans because of what they had been eating for the last ten years, and, by inference, that there is at least some proof that GMOs have no adverse effects on human health. In chapter XX, dedicated to the field trial, this example is discussed along with the reaction it produced in the public. At line 116 the professor says "I have been eating salad for twen- for seventy years and I am not green". The argument is meant to prove that, as he goes on to say,

"it is not that genes pass into human organism in an automatic way". In this case the evidential move takes the form of exemplary argumentation: if the professor is not green, the logic goes, after having eaten green salad all his life, *then* genes do not pass into the organism.

6.10 Presuppositions

Presuppositions are pragmatic inferences which convey what is presupposed as something already known by both speaker and hearer (Levinson, 1983). They are ubiquitous in discourse and have an important part in making communication efficient. Presuppositions have also been defined as shared assumptions which constitute the background of the ongoing communication (Stalnaker, 1973). The notion relies upon the concept of "common ground" (Stalnaker, 1974). Two people's common ground is "the sum of their mutual, common or joint knowledge, beliefs, and suppositions" (Clark, 1996: 93). Common ground includes a wide spectrum of information which is shared between interlocutors, ranging from the general knowledge two persons living in the same country normally share to very specific and private pieces of information. In a restaurant for instance, both customer and waiter have a partly shared sense of the setting they are in; as a consequence they have expectations about what is happening and what should happen next. These shared expectations produce inferences which determine how the talk and the actions of both parties will be interpreted. While "presupposition" is used in common language, the notion of presupposition has a technical sense in linguistic pragmatics. Presuppositions are inferences activated by specific linguistic triggers. Presuppositions are characterized by constancy under negation. For instance, the sentence "Mary's car is broken" presupposes "Mary has a car". Noticeably, even if what is predicated of Mary's car is negated, as in: "Mary's car is not broken", the presupposition "Mary has a car" remains valid. Such presuppositions are called existential because they convey inferentially that the presupposed entity exists. Definite

descriptions like “Mary’s car” are among the most common forms for providing information in efficient way. Normally we are not aware of the presupposed existential assertion when we merely use a definite description. What is presupposed seems obvious. However, the level of epistemic commitment in the delivery of information through presupposition is lower then when the information is delivered asserting it rather then presupposing it. Presuppositions can be explicitly denied. One could say: “Mary’s car isn’s broken because, in fact, she doesn’t have a car” without incurring in logical contradiction while one could not say, without being self contradictory: “Mary has got a car only she does not have one”. Because presuppositions can be cancelled, they make the speaker not fully “liable” for their content. As such, they have a very important rhetorical role. Presupposition is of interest to linguistic pragmatics, and it has been the object of innumerable studies (for a review see Levinson, 1983). I shall not dwell any further on the nature of the phenomenon, but I list here some of the linguistic elements which trigger presuppositions: Definite descriptions, as in the examples we have just seen, trigger existential presuppositions. Factive verbs such as “realize” (as in “John realized/did not realize that he was in debt” that presupposes “John was in debt”).“Know” or “regret” presuppose the truth or factuality of their complement clauses. Also, change of state verbs, like “to stop”, “to begin”, verbs of judging, temporal clauses, (“before,”, “while”), comparison and contrasts, and non restrictive relative clauses (relative clauses that provide additional parenthetical information) all trigger characteristic presuppositions. For instance, the sentence “Mary, who knew the story, told it to John” presupposes that Mary knew the story. Furthermore, counterfactual conditionals and questions also can introduce presupposed information. For a detailed list and theoretical discussion see Levinson, (1983: 181 – 185). In the context of a study of the ideological proprieties of discourse, presuppositions have an important role, for they not only hint at the shared knowledge between speakers, they also can have informative uses (Karttunnen, 1974). Let’s go back to the sentence: “Mary’s car is broken”. We can imagine two situations where the sentence is uttered: in

one all participants know that Mary has a car, in the other the speaker clearly knows it but some of the others so far did not know so. In the second case participants will infer that Mary has a car because of the properties of the sentence. When a presupposition introduced in the discourse is not already part of the shared knowledge of participants but rather constitutes a new piece of knowledge for some interlocutor, the presupposed information is passed on inferentially as part of the stock of knowledge shared between participants (Lewis, 1979). Cognitively fundamental in any kind of communication, presuppositions also project the flavor of uncontested reality on elements the reality of which can in fact be highly contestable (van Dijk, 1995; Sbisà, 1999). In many circumstances social arrangements make it hard to challenge the presuppositions of the speaker without entering a confrontational terrain, something which is frequently avoided in interaction (Goffman, 1967). Because of their normative affect presuppositions can have a persuasive function. The validity of what is presupposed constitutes one of the felicity conditions for the accomplishment of assertive speech acts (Austin, 1975; Sbisa', 1999). Presuppositions can contribute to create a context which offers as objective and uncontested one particular version of reality: when the version of reality proposed has to do with values and socially relevant issues, informative presuppositions can be an instrument for the persuasive delivery of ideologically imbued discourses. These particular inferences seem to have a normative component (Sbisà, 1999). Thus, presuppositions can play an important role in the *construction* of reality via linguistic means, and they are frequently exploited in ideological discourse. The interaction I have been using to illustrate the methodology offers no clear examples of this kind of "persuasive" use of presupposition, so I shall illustrate it using text from a newspaper. Newspaper headlines frequently make use of presupposition:

Consider:

"La posizione della Santa sede in favore degli OGM e' un fatto di grande importanza" [The position of the Holy See in favour of GMOs is a fact of great importance](Bozzo, 2002). Here the definite description triggers the presupposition that such position of the Holy See in favour of GMOs

exists. Because we know from a wealth of other data that support from the Church is neither unanimous nor uncontested to offer it as a given constitutes a partisan way of representing facts which suggests that the writer supports GMOs.

6.11 Conclusion

I have listed a number of linguistic features of discourse that play a part in the construction of narratives on food biotechnologies. All these features fit into larger discursive strategies. In order to make a narrative compelling and more believable, speakers deploy general strategies that include characterizing as factual one's own version of events and constructing oneself as competent, dependable, and not personally tied to a position one is supporting. In the example quoted above, the professor deploys a general "professorial" strategy to make his claims more persuasive. The scientist advocates a "model" of biotechnologies that reduces the GMO issue to matters of technological advancements and economic decision-making. This effect is achieved rhetorically through argumentation. By the same token, the polarized view that sees "Americans" "colonizing" "us" and puts the accent on the enormous economic interests implied in the development of biotechnologies is dismissed as "slogan" and an alternative "model" is proposed. The responsibility for the diffusion of biotechnologies is dissolved: "these large multinationals belong to nobody" says the professor, and further distributes responsibility among all "the shareholders". The "American" vs. "us" storyline is rejected, and instead a relationship between "technological tools providers" and "clients" is proposed. This shift marks the beginning of an argument that depicts GMOs as simply the latest technological advancement in a very long series of positive developments for agriculture. How does the professor proceed to communicate that GMOs are safe, that they represent progress, and that nobody is trying to force them on us? The professor's discourse exhibits features of what Billig, after Gilbert and Mulkay, calls the "empiricist

discourse" (Gilber & Mulkay, 1984). This kind of discourse is typical of scientific reports and bears all the linguistic signs of objective and factual description of events; "the empiricist repertoire is a standard device for constructing the out-there-ness of scientific phenomena" (Billig, 1987:153). The features of the empiricist discourse include: grammatical impersonality, data primacy, universal procedural rules (ibidem: 153). These translate into third person impersonal verbal forms and in expressions like "data suggest that…" in which the data are given agent role and results seem to come straight from them without the interpreting intervention of the researcher. This type of discourse is meant to provide factuality and universality to scientific data, but as Billig puts it, it is "also bound up with the business of fact construction" (ibidem: 153). In this less specific form, the repertoire of the empiricist serves the purpose of conferring matter-of-fact-ness to one's particular narrative in any given context. Overall, the strategy aims at minimizing the contribution of the speaker and letting the "facts" speak for themselves. In this example, factuality is matched with assertiveness and at times with the character of explicative, pedagogical talk found in lectures.

Consider:

"as of today the owners of these technologies are Europeans, they are not Americans. The biggest concentration of biotechnological know how is at Bayer" (lines 49-53).

Here the assertiveness of the sentence contradicting the previous speaker is underlined by the temporal phrase "as of today". The resulting impression is that we have been presented with a fact by a knowledgeable person with state of the art information:

"I would like to go back to my, to a model right, let's say we have farmers who are businessmen," continues the professor (lines 57-60). The sentence proposes an abstraction, something appropriate in explanatory contexts like lectures; this is not mere opinion but exhange of knowledge from more knowledgeable to less knowledgeable persons.

The professor carries on illustrating his model: "and there are other companies […] which provide the technical tools…" (lines 61-63). The strength of the model proposed is achieved via the explicit claim that

clients and providers of technology stand to each other in the proposed relationship of mutual freedom.

The model is explicit, almost pedagogical. Consider: “farmers like businessmen are customers” line 66, “The technology normally is chemical technology” (line 68),

The expression “among other things” at line 71 seems to play a part in building up the sense that biotechnological advancement is nothing but a further development within a system that has been in place for a long time. Overall, the professor uses expressions that are part of the repertoire of the knowledgeable expert, who knows some field inside out.

The exchange shows that the interlocutors negotiate not only a view of biotechnologies but also the very frame of the interaction. The metaphor of frame has been used to describe the structures of expectation of a given interaction. Some of these structures are intrinsic in the ongoing social situation: a public encounter with invited speakers. Others are negotiated by the participants. Here the professor dexterously shifts the interaction to a “professor to novice” frame. As such the exchange takes on the features of a passage of information from knowledgeable to ignorant rather than those of a discussion between peers. At line 93 the professor asserts that if European farmers don’t accept GMOs “it is not a tragedy”. The professor teaches biotechnologies in a major university and he represents the Italian Association of Biotech Companies at the meeting. He is arguably quite interested in the future of biotechnologies in Europe. His statement then can amount to “stake inoculation” (Potter, 1997), a device for managing the speaker’s partisan interest in a particular version of events. Letting the public know that he is not particularly concerned about the future biotechnologies, the professor implicitly claims impartiality. If the public recognizes his impartiality, this is likely to further the professor’s credibility in the discussion.Specific jargon also plays a part in projecting onself as a competent, expert speaker. Esoteric lexicon is often a feature of scientific discourse; it positions the speaker as specialist in the field and may also have the effect of inhibiting expression of contrary positions by less knowledgeable parties. In other words it can result in shutting up

opposing voices that cannot match or contest technical jargon. The scientist uses the English expression “know how” (line 52), which is not very common in Italian and “trasgenesi”, a term specific to the field of biotechnologies. Most likely no lay parson in the room knows exactly what “transgenesi” means. It is from the position of expert, constructed in discourse in part thanks to specialized lexicon, that the scientist can declare with emphasis that “the probability that this is harmful is null!”. For good measure he adds “I don’t know if you realize that” (lines 127) further to underline that his statement is not only true but that it *should* be self evident to everyone. The reaction from someone in the audience shows that not everybody was convinced by this discourse. The citizen who says “but I don’t trust you” (line 131) clearly takes the contribution of the scientist as nothing more then the expression of his belief, and not as the definitive pronunciation of an expert in the field. Clearly, she cannot challenge the scientist’s claims about “transgenesi”; nor perhaps can she contradict his appraisal of the worldwide market for biotechnologies. She simply publicly denies her trust. The utterance of the citizen is loud enough to be heard by everybody (including my tape recorder); but it may not have been loud enough (or sufficiently “on record” or “ratified”) to be counted as a turn; perhaps the professor simply decided to ignore her. Nonetheless, her contribution amounts to the last word, a last word forcefully in opposition to the whole position of expertise the professor seems to try to be claiming for himself.

7 ANALYSIS AND DISCUSSION

In this chapter I propose the analysis of a council's declaration of rejection of GMOs, of four texts concerning the position of the Catholic Church towards biotechnologies, and of excerpts from a case study involving the experimental cultivation of GM rice. Whereas the Bubbio declaration, and the published pieces about the Church, suggest a kind of fixed, pre-thought position, which is also more "designed" and constructed, the interactive material shows bits of ideology in action in a public, sometimes confrontational setting.

7.1 The anti-transgenic declaration of the Bubbio council

As I have mentioned in the paragraph dedicated to Anti transgenic councils and regions, (4.8.4), many local administrations in Italy have declared themselves against GMOs. Councils and regions have voted to ban the cultivation of GM crops from their territories. GMOs are sometimes excluded from food served in public institutions such as schools, hospitals and employers canteens. Some administrations oppose the diffusion of GMOs and campaign against them via council resolutions. The legal status of these resolutions is dubious because they rule over matters that are under national and European jurisdiction (but see paragraph 4.9.3 on the Italian Law on Coexistence). As of August 2005, there are 26 products, GMOs or derived from GMOs that can be legally commercialized in the EU (Community register of food and feed, n. d.). These products have passed the duly required assessments and have been declared safe by the European Food Authority under the provisions of EU legislation. Products that have been authorized for human consumption in the E.U. cannot be banned from part of Italian territory because of the resolution of a local administration. By the same token, the authorization to carry out a field trial is issued by the Ministry

of the Environment in Rome; local administrations do not have authority over the permission for experimental planting of GM crops and they cannot veto the decision-makers. Furthermore, as we have seen, local administrators are not even directly notified of authorized field trials. However, in practice it might be awkward to cultivate GM crops in a territory that local authorities have declared "GM free"; when possible scientists avoid controversies for fear of vandalism to the fields. In past cases where potential conflict was anticipated, the applicants have withdrawn their requests and carried out the experiments elsewhere. (Battaglino, personal communication; Onorati, personal communication; D'onofrio, personal communication) Local authorities opposed to GMOs are listed in the web site of the Association "Free from GMOs" The web site also lists all the local resolutions and links to information over the GMO controversies. The association has also been involved in organizing three conferences. The "First national conference of anti transgenic councils" was held in Florence in May 2001. The second was held in Asti in 2004. There was also a "European conference of the GM free regions, biodiversity and rural development" in Berlin in January 2005.In Italy the first local administration to issue a formal resolution against GMOs was in Bubbio, a small village in the Asti province. The Asti geographic area, in the north-west of Italy, is famous for its food products, in particular for the sparkling wine called spumante. Bubbio decided to become a "Council free from GMOs" on August, 13, 1999. Bubbio's vice mayor, Gianfranco Torelli, is a wine maker, and he is committed to organic farming and to the anti GMO cause. He promoted the resolution and is an active figure in Italy opposing the introduction of genetically modified foods and crops. (Torelli, personal communication)
I here present the translation of the Bubbio resolution. The original text of the "delibera" in Italian is in the appendix.

Bubbio Council

Asti Province

ANTI TRANSGENIC COUNCIL

The Council assembly, having taken into account that the introduction into farming of GMOs has raised great doubts and perplexities in public opinion

for ethical reasons,

for the consequences on the health of citizens,

for the irreversible dangers to the ecosystem,

for the further disparity that it would create between rich countries and developing countries.

Considering that the new farming model proposed is in clear contradiction with that practiced in our area, which is strongly linked with traditions and with the features of the territory;

Having decided, in the light of what is mentioned above, by virtue of the scope of its authority, to take a stand against the introduction into agriculture of genetically modified organisms

Having taken into account the support of the Council Secretary, in accordance with article 53 of the law 142/90 concerning the administrative regularity of the present document;

unanimously and concertedly with votes expressed by raising hands;

decides:

to declare the council of Bubbio an “anti transgenic council”

to post below the street signs at the entrance of the village the sign “Antitransgenic council”

To forbid in all the territory of the council experiments, farming, and animal farming of living organisms, both vegetal and animal, obtained using genetic manipulation

To create an ad hoc council commission initially composed of the vice mayor and two council members and that can be in the future composed of other persons in order to pursue the following aims:

To inform, using meetings, postings and letters, the producers in the council territory (winemakers, ham producers, bakers and confectioners) about the risks of the use of genetically modified

> products in the (re?)productive chain (for example eggs from chickens fed with GMO feed, selected yeasts, enzymes, ascorbic acid obtained with methodologies that imply the use of GMOs and so on)
>
> To inform, using meetings, postings and letters, the resellers in the council territory about the risks of selling foods of producers who have been accused of using genetically modified products in the reproduction[8] chain
>
> To inform the citizens, using meetings, postings and letters, about the risks linked with the eating of products obtained with GMOs and to start a serious campaign for alimentary education linked to the use of traditional quality products
>
> To foresee during events organized by the local association for Bubbio an effective promotion of local products promulgating in the most effective way the message against genetically modified products.

This official text contains almost in a nutshell a large number of the arguments against GMOs heard in Italy. I analyze it as a specifically Italian representation of GMOs. The raison d'etre of the document comes from the "great doubts and perplexities" engendered in "public opinion" by the farming of GMOs. This by itself is of interest. The Bubbio administration roots its decision in the concerns of the public, as if due to public pressure there were an urge to legislate or to take a stand on a controversial matter. "Public opinion" is a very general term and it is likely to refer more to the worldwide movement against GMOs than to citizens of Bubbio particularly worried about GMOs. The programmatic part of the document, further down, proposes to inform, warn and educate citizens and food producers and dealers, so it is fair to suppose that at the moment in time when this document was issued there was *not* a well formed, public opinion movement in Bubbio calling for an "Antitransgenic" declaration. The reasons for public concern, which in the text appear to be at the root of the resolution, are of four kinds. The

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[8] *This is most likely a mistake for the intended expression "production chain".*

first is “ethical”: which obviously seems to imply that GMOs are unethical. The point is not developed any further, as the document then focuses elsewhere, but this aspect is mentioned as the first reason of concern. In this instance, “unethical” can refer to the practice of introducing alien genes in an organism. Further down there are references to other, socially linked reasons why GMOs can be considered “unethical” The declaration has the features of polemic discourse, which taps on several argumentative levels to question its target. The first reason why GMOs are unethical most likely has to do with the intrinsic character of genetically transformed plants. The second reason, “the consequences on the health of citizens”, uses an existential presupposition, triggered by the definite article, to attribute with implicit certainty unhealthy properties to GMOs. There is no hedge to such a claim. The consequences, clearly negatives, for citizens health are taken for granted. Also linguistically presupposed - and thus taken for granted - are “the irreversible dangers to the ecosystem”, the third reason given. The fourth reason refers to what can be called the ‘Social Justice’ issue, namely the fact that GMOs might have the effect of further impoverishing certain areas of the world for the profit of rich corporations in the west. The document also introduces a fifth argument, although it is not explicitly listed. The argument is linked to matters of tradition, culture and identity. While these aspects emerge with consistency in the Italian data, they have so far received little attention in the literature on biotechnologies (See for instance Bauer & Gaskell, 2002a). This aspect is actually what specifically characterizes the food biotechnology debate in Italy. In the Bubbio declaration, GMOs are described as opposed to what farming is in “our” area, where the plural first person possessive indexes a community and an identity which encompasses farming practices. Tradition and territoriality are seen as values “in clear contradiction” with GMOs. GMOs here are something much bigger and wider then pest-resistant varieties of crops. GMOs are depicted as the wrong approach to agriculture; they are the product of an entire worldview that is rejected here. The Bubbio resolution represents food biotechnologies as dangerous for health, the environment, local

culture and economy. In particular, GMOs are represented as threatening the current way of farming, which is in turn strongly linked with tradition and with local geography and terrain.

7.2 The Catholic Church and GMOs: analysis of four texts

In Italy the influence of the Catholic Church on opinions about GMOs is conspicuous. As I will show, the authority of the Vatican serves as rhetorical ammunition for making claims both for and against the technology and its products. Some informal discussions of biotechnologies--for example media reports--frequently claim that GMOs are good because "even the Church approves of them"; on the other hand, others evoke the claim that the Church is against them. The moral authority of the source makes one's own claim stronger. The truth about the attitude of the Roman Curie toward biotechnologies is mostly lost in the discussion. This occurs not only as a consequence of biased reporting but also because the Catholic Church incorporates, though not without struggles and contradictions, several different voices. It is easy to find diametrically opposed positions on the issue expressed by different Church members. I will consider here four different documents: one intervention from a Cardinal at a seminar organized by the Vatican on the topic of GMOs and three newspaper articles, two of which are written by priests and one reporting the statements of an archbishop. I aim to show how different representations of food GMOs exist even within a highly hierarchical and allegedly ideologically compact body like the Roman Catholic Church. One interesting aspect will be the range of appeals to different values which are appealed to in order to support the respective positions.

7.2.1 "Dress and keep"

The first document comes from the web site of the Vatican. It presents the opening remarks of Cardinal Renato Raffaele Martino to the

symposium “GMOs: menace or hope?”, held in Rome on November 10 to 12, 2003 (Martino, 2003). Participants included world renowned scientists, theologians and ministers of the Italian government. I present here the translation of the most salient parts of the document. Numbers between brackets have been added to aid in identifying paragraphs.

> (…)
>
> {1}The Pontifical Council of Peace and Justice has organized and promoted this encounter with the aim of collecting the largest body of informative data about GMOs, which in the future might serve to supplement ethical and pastoral judgment, which is day after day more needed and which can await no longer.
>
> (…)
>
> {2} This Pontifical Council has all the responsibility to face such problematic complexity, which proposes once more, from certain vantage points, the question of the relationship between faith and science; this Dicastero[9] wants fully to take charge of it and to make good use of your science and experience, and at the same time, to rely on the century long knowledge of the Church and its doctrine, which allows [us] to find, with balance and in the truth, a point of useful and fertile synthesis for producing good for men of our time, especially for the poor.
>
> {3}From the program of the seminar you can see that it is structured in four sessions: GMOs and scientific research, GMOs, aliments and trade; GMOs and security of the environment and health; GMOs and moral implications.
>
> (…)
>
> {4}Many have displayed some surprise and wonder at this initiative of the Pontifical Council, asking what reason justifies it. It is, in this case

[9] *I was not able to find a proper translation for this term, it indicates the Vatican institution that organized the conference, an institution that aims at understanding new scientific phenomena from the perspective of the Catholic Church.*

as well, about giving way to a deep and essential need in the religious and moral mission of the Church, that of shedding the light of the Gospel on all that concerns the promotion of man and the affirmation of his dignity. The Church does this, respecting natural law, making good use of the results of scientific research, and bringing up to date the message of the Holy Books and applying the principles of its social doctrine.

{5}And in this respect, while I conclude this short introduction, let me share with you the lesson, very pertinent and instructive, which comes to us from the first chapters of the Bible which talks about the creation. In the plan of the Creator in fact, created realities, good in themselves, exist in the service of man. While creating man in his image and likeness, He wants [man] to "have dominion over the works of thy hands; thou hast put all things under his feet. All sheep and oxen, yea, and the beasts of the field. The fowl of the air, and the fish of the sea, and whatsoever passeth through the paths of the seas". (Sal 8, 5-7[10]).

{6}The dominion of man over other living beings, though, does not have to be despotic and thoughtless; on the contrary, [man] has "to dress and to keep" the goods created by God: goods that man has received as a precious gift, put by the Creator under his responsibility.

{7}The prohibition of eating from "the tree of knowledge of good and evil" (Gen 2, 17) reminds man that he has received everything as a free gift, that he continues to be a creation, and that he will never be the Creator. The sin of our ancestors was provoked exactly by this temptation: "and ye shall be as gods" (Gen 3, 5). Adam and Eve wanted to have absolute dominion over all things, without bowing to the will of the Creator. Since then man must gather food from the soil with pain---"In the sweat of thy face shalt thou eat bread, till thou return unto the ground" (Gen3, 17-19).

{8}Despite Original Sin, the plan of Creator--the meaning of his creatures, including man, who is called to be the cultivator and guardian of the created--remains unaltered. Man, endowed with intelligence

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[10] This and further quotations from the Bible have been translated into English according to King James Bible. Retrieved on July 3rd, 2005, from http://www.hti.umich.edu/cgi/k/kjv/kjv-idx?type=DIV1&byte=1477

> thanks to which he is able to understand the sense of things, must safeguard the goods of the earth that he has received as a gift. Given the capacity to discover causes, laws, and mechanisms which govern beings, living and otherwise, and as a consequence capable of intervention on them, man must use these capacities to "dress" [i.e., tend or till] and not to destroy. To dress means to intervene, to take decisions, to take action, not to let the plants grow randomly. To cultivate means to improve and to perfect, so that better fruits might come, and more abundantly. To cultivate means to order, to clean, to take away what destroys and what ruins. To cultivate is the best way to safeguard.
>
> Thank you everybody and work hard!

The passage, from the opening of an international seminar promoted by the Vatican, is a straightforward declaration of the principles that guide the Church with respect to nature and consequently, as is made explicit, with respect to GMOs. The speech can be considered an official stance taking on the part of the Vatican. Values and priorities are spelled out and the attitude toward GMOs is presented as derived from the just relationship between man and nature, which is in turn prescribed by the Bible. Man is put at the centre of the universe and is not only able but obliged to intervene and make use of his capacities to change what is found in nature, with the instruments of his ingenuity. Man is above nature and need not worship her; however he must worship God and His laws. Hubris was once man's sin, and it might be again. But even after Original sin man keeps his position as master of all other creatures, even if he is a creature himself and never Creator. The sin of hubris--man who wants to "be like God"-- is part of the rhetoric found in Rifkin's enormously popular writings on biotechnologies (Rifkin, 1998) and, indeed, in that of many detractors of biotechnologies. Often hubris is linked with the myth of Frankenstein, conjuring the dreadful consequences of man's arrogance. Cardinal Ruini mentions the sin of hubris, {7} echoing these discourses, but he does so only to reassert the superiority of man over all other creatures and his right to make use of them, a right that according to doctrine comes from God. On the other

hand, we shall notice that the topic of the seminar and the words of the Cardinal refer to the manipulation of the genomes of living beings other than humans. However much it might stress man's God-given dominion over other creatures, the Church has expressed strong opposition to gene manipulation involving human beings and is fiercely opposed to stem cell research which uses embryos (Pontificia Accademia per la vita, X Assemblea Generale, 2004). Martino's speech offers a representation of food biotechnologies derived from exegesis of the Bible. The focus is on the compatibility of biotechnologies with the Catholic doctrine, deduced from Biblical texts, rather then induced from the many elements which characterize the issue. The difference between deduction and induction is essential in cognitive terms, and deduction seems a characteristic trait of ideological thinking, where assessments of new phenomena are based on previously decided criteria. However, this whole exercise could also be seen as strictly rhetorical. Invocating the strength of the tradition and of the Bible is a powerful rhetorical tool to gain strength for one's position. Further, the Cardinal chooses to restrict his commentary to the scientific aspects of gene technology, leaving behind social and economical aspects that are controversial even within the Roman Church. Martino addresses the technology and its compatibility with the Catholic doctrine, and the selection (and restricted scope) of the topic is conditioned by an ideological bias (van Dijk, 1995, 1998). The discourse could be seen as a prototypical example of ideological thinking. A new item appears, in this case a new technology. In order to assess it and to assign it a place in one's world, previous knowledge and standing principles are consulted. The textual passage analyzed shows how such thinking--common to everyone whether as conscious or conspicuous as in Martino's speech--works. Most of us don't have a clear exemplar to consult when we try to decide how to assess a new item or a new technology, but those who accept the authority of the Catholic Church, reading Martono's rhetoric, can be sure that the technology of gene transfer is not in conflict with the Bible's prescriptions. GMOs are inferentially characterized in positive terms: gene biotechnology might be a new way for humankind to fulfill its duty to "cultivate and safeguard" nature. GMOs might mean better

fruits from humankind's efforts "to cultivate and to perfect". The declarations of the Cardinal had repercussions in the press, from both critics and supporters of GMOs. The debate on GMOs was ongoing. Previous documents from the Vatican provided the sense that the official position of the Church might favor GMOs. In fact, the news that the Vatican was organizing a seminar on GMOs had already produced debate and speculative interpretations about the Church's official position on the matter.

7.2.2 "Blessed GMOs"

I next analyze the translation of an article from Panorama which predates the speech by Cardinal Martino. Panorama is a weekly magazine with a circulation of about 400.000 copies (Tiratura dei quotidiani e settimanali Italiani nel 2003). Despite its covers, which are always dedicated to naked women, Panorama hosts the writings of some of the most prominent journalists of the country, both from the right and the left. The article in question is by Gianni Baget Bozzo (Baget Bozzo, 2003), a priest and intellectual, and a public figure. Baget Bozzo is very freqently the guest of television talk shows and debates. He has a declared pro-globalization, pro Italian government, pro-US attitude. He is active within Ragionpolitica, the educational branch of Forza Italia, the political party of the (then) Prime Minister. Words between square brackets are mine, added to clarify the meaning when the reference in the translation is unclear.

> Date: August, 14, 2003.
>
> Headline: {1}Blessed GMOs
>
> Body of the article:
>
> {2}The position of the Holy See in favour of GMOs (genetically modified organisms) is a fact of great importance. It indicates the favour of the Vatican for technological developments and its support for the possibility that such developments can sustain human cohabitation [with Nature].

{3}The topic is of major importance because it implies a meaningful distance from those ideological positions that hold new technologies and the multinationals producing them to be the negative principle of history.

{4}Coming close to many African countries, the Church decides to look positively at these possibilities, putting aside the fear that these [technologies] might damage the life of man and contribute to the deprivation of the planet.

{5}Thus perishes the idea that between technology and human development there is contradiction. On the contrary, it appears that the development of science and technology is exactly what allows humankind to face the fundamental problem it faces: winning the challenge of hunger in the world.

{6}The position of Christianity is very different from that of ecologist ideologies: all those positions which hold that scientific development produces effects detrimental to the human condition.

{7}At the centre of the Christian vision of life there is the concept that what is good for man and his development is also good for the conservation and development of physical nature.

{8}This Vatican position will be contested because it cuts at the very roots the idea that there is a connection between Catholicism and the ideological ecologic position; and more than anything (it will cut at the roots of the idea that) there is a connection between a negative notion of science and a religious position.

{9}The document that the Holy See will publish on GMOs is a message that has to be listened to also by Italian politicians who, like some Regional bosses in the north, have decided very rapidly to destroy the lands reserved for GMOs. The European Commission has decided that it is necessary to stabilize compatibility between GMOs and non GMOs but that development has to stand on both these legs [i.e., both traditional and genetically modified crops].

{10}An overly rapid decision to eliminate GMOs contradicts a fundamental assumption of western politics: the possibility of reconciling scientific creativity with sustainable development.

The article uses components of the official position of the Church for rhetorical aims within an ongoing polemic. The rhetorical strategy of the author is to make it harder for ecologists to use the influence of the Catholic Church in order to strengthen their standpoints. Green and left wing forces in Italy make up a multi-faceted world with important roots in the Catholic faith and establishment. Critics of GMOs are very aware of the influence that the Church's position has over a wide spectrum of Italian population (Colombo, 2004). At {1}, the headline provides the first, baseline topicalization. "Blessed GMOs" focuses on the Church's approval of the GM technology and verbalizes it as a blessing, an ecclesiastical "stamp of approval" on GMOs from the Church, something not described but rather taken for granted throughout the whole article. At the very start of the article at {2} the author triggers a presupposition with the use a definitive description "The position of the Holy See in favor…" . Thus the favorable position, while being the starting point of the whole argument, is not introduced as new information but rather offered as a given, something about whose existence there is no controversy. In particular, the author takes for granted a contradiction between some "ecologic position" and the official policy of the church. The argumentative manoeuvre is to "cut at the roots" of potential standpoints that would connect Catholicism and ecological ideologies on the one hand, or link religion and negative attitudes toward technology on the other. The relevance of the argument within the article is evident in the reiteration of what appears to be the focus point of the writing. At {3}, {5}, {6} and {8} the author stresses the same point: no connection can be made between "ideological ecology" and the position of the Church. One sentence in particular is relevant for its ideological components:

> {8}This Vatican position will be contested because it cuts at the very roots the idea that there is a connection between Catholicism and the ideological ecologic position; and more than anything (it will cut at the roots of the idea that) there is a connection between a negative notion of science and a religious position. .

Lexical choice is one of the many devices for expressing stance. In Italian "ideological" is used to mean "biased", "false", "not corroborated by fact", in sum as the opposite of "factual", "scientific", "rational". Thus naming a position which criticizes GMOs "ecologismo ideologico" lexically positions it in a negative way. "Ecologism" is not an English word, however it would be a fitting translation of the Italian "ecologismo", as the ending in *–ism* provides the typical morphological costume for movements and ideologies: Communism, Capitalism, and Catholicism, for example. "Ecologismo ideologico" is by definition against GMOs on ideological grounds. The author also presupposes that there exists a (mistaken) idea linking a negative conception of science and technology with the religious position The Vatican's position in the sentence in {8} is the passive subject, target of hypothetical future polemics, but the author does not specify who the active force behind the polemics will be. The reader might infer that those who would use such a polemic might be those who seek to use the authority of the Church for advocating "ideological ecology". The fact that the position of the Vatican "cuts [such an idea] at the roots" ("taglia alla radice l'idea che….") is again presupposed: Baget Bozzo offers it as a datum. It is Badget Bozzo who presupposes that the position of the Vatican "cuts at the roots" claims of a link between Catholicism and "ecologismo." However, the claim is offered to the reader as a fact through the syntactic construction, in particular the use of the passive verb "will be object", and the resulting pragmatic inferences. The last sentence of the article also hints at a polarized worldview. "the possibility of reconciling scientific creativity with sustainable development" is presupposed as "a fundamental assumption of western politics" within the sentence: "An overly rapid decision to eliminate GMOs contradicts a fundamental assumption of western politics: the possibility of reconciling scientific creativity with sustainable development". Following Baget Bozzo western politics are, thus, inherently interested in sustainable development and aim to integrate that with scientific and technological creativity. Such a claim is hardly uncontroversial, as many authors assume instead that western politics have a deep, inbuilt disregard for the

environment;that there is no real political interest in sustainable development; and that science and technology are synonymous with hubris and the lust for profit.Another linguistic device that can display ideological stance is anaphoric reference (van Dijk, 1995). In this case the author bases his argument on the standpoint of the Vatican, which expresses the official position of the Roman Catholic church. In {6} and {7}, however, he refers anaphorically to the position of the Catholic church as that of "Christianity" and of "Christian vision"—a universe which encompasses a much wider sphere than simply the Catholic Church. In so doing the author through a semantic shift extends the position of the Vatican to a much larger community and in so doing strengthens rhetorically the Vatican's authority. The text by Baget Bozzo adopts and promotes several ideologically loaded representations of the food biotechnology issue; some are explicit, others are only inferable. Here I list some of them:

- Ecological ideology exists.
- Someone tries to find/ sees links between Catholicism and ecological ideology.
- Someone tries to find/sees links between a negative conception of science and the religious position.
- The document by the Vatican cuts at the roots of such claims.
- There is no link between Catholicism and ecological ideology.
- There is no link between a negative conception of science and the (correct) religious position.
- Science and technology allow humanity to fight world starvation
- At the centre of the Christian vision of life is the concept that what is good for man and his development is also good for the conservation and development of physical nature.
- One of the fundamental assumptions of western politics is the possibility of reconciling scientific and technological creativity with sustainable development.

The last of these stances appears in {10} which introduces a semantic shift into the text, so that to preserve textual coherence the reader must activate a set of inferences guided by ideological standpoints. The claim is that western politics assume that it is possible to reconcile sustainable development with scientific and technological creativity. In {3} the author suggests that critics of biotechnologies target multinational corporations (among others), seen as agents of "the negative force of history." These corporations without doubt at the moment embody "scientific and technological creativity" in the field of food biotechnologies. One of the best agued critiques of biotechnologies is that they have been developed commercially for the profit of a small number of corporations. Supporters and detractors both agree upon this obvious fact. Still, one of the words that fails to appear in the text in question is precisely "profit". "Scientific and technological creativity" might be in this instance a euphemistic way of referring to the impulse given to the technology by corporations. Western societies inspired to some extent by Adam Smith's capitalistic principles share the assumption that the pursuit of personal profit is not only compatible with but enhancing of the public good; the author provides a "profit free" version of that claim. Lastly, the author argues for Italian politicians to listen to the Church and act accordingly {9}, explicitly calling them to accept the standpoint of the moral authority. The sentence is both a warning and an exhortation, closing an engaged skirmish in what appears to be an ongoing political battle over coexistence between traditional and GM crops, and over the future of biotech research in the country. Ideological discourse and stance in discourse are characterized not only by the claims explicitly and implicitly made but also by rhetorical gaps and omissions. Facts contradicting an argument go conveniently unmentioned. Baget Bozzo in his writing chooses to underline the position of the Holy See, presenting it as compact, official, and definitive, while he ignores the many dissenting voices within the Church on the matter of GMOs. I will present two examples from within the Church that provide a depiction of GMOs very different from the two previous ones.

7.2.3 "Can Biotechnologies really be the solution to the problem of food famine?"

The following article comes from Grazia, a weekly magazine targeting upper middle class women, which prints about 300.000 copies per week (Tiratura dei quotidiani e settimanali italiani nel 2003). The magazine is owned by the Mondadori editorial group. The author of the article is father Giulio Albanese, a Combonian missionary priest. Father Albanese is the chief director of misna.org, the press agency of the missionary congregation. The article was published the 19th of August, just a week after that written by Baget Bozzo. The article refers to a forthcoming document expected from the Pontifical Council of Peace and Justice. The document would amount to an official position-taking on the matter of food biotechnologies. Unlike Baget Bozzo, Albanese clearly holds that there is a lot to worry about in biotechnologies, and he mentions no support, given or probable, on the part of the Church for GMOs. I report here fragments of the article (Albanese, 2003):

> Headline:
>
> {1} The GMO issue. Can Biotechnologies really be the solution to the problem of food famine?
>
> Body of the article:
>
> {2}The Pontifical Council for Peace and Justice has the intention to call for a seminar of study on the delicate matter of GMOs in the fall, with experts on the topic and interested personalities, a seminar from which the office will derive fit conclusions.
>
> (…)
>
> {3}In 1980, the Supreme Court of the United States, overturning a previous sentence on patenting living organisms, authorized the commercial patenting of a bacterium. Then patents followed, on all living organisms (man excluded, but not his organs). Since then the industries can use the pretext of making an "improving" modification in order to obtain the proprietary and exclusive rights to plants suitable as

> food. As a premise [it should be said that] the modifications are not always that "improving", [and that] the commercial intent is without scruples.
>
> {4} The result of genetic modification in space and time, according to many scientists, is never foreseeable, because of the complexity of every organism and of the relationships that link genes among themselves, and also due to the fluctuation of the elements within the genome.
>
> {5} Meanwhile biotech industries keep defending with a sword the use of genetically modified plants: to resolve the alimentary problems of poor countries and to reduce the use of noxious chemical substances in agriculture. But is there ground for believing them? Imposing the annual payment of patents makes transgenic cultigens all the more expensive, and they will destroy precious biodiversity, the true wealth of developing countries.
>
> (…)
>
> {6}God forbid! Biotechnologies, if well governed by politics, could with time (but only with time!) be a blessing: only one example, the therapeutic banana under study in South Africa, would incorporate a vaccine against Cholera. Only, it is to be avoided that from biotech labs one goes straight to business, from field trials to viruses and bacteria endowed with new and unknown forms of aggressiveness.

The headline already frames the content of the article and sets the topic. The question posed in {1} clearly is rhetorical and has an implicit "no" answer embedded in it. The author in {2} mentions the meeting called by the Pontifical Council Peace and Justice but chooses not to speculate about the likely content of the upcoming declaration of the church. By contrast Baget Bozzo, the author of the article previously considered took for granted that their deliberations would be favorable to biotechnologies . Albanese instead focuses on the patenting of living beings and the unscrupulous commercial endeavors of industries {3}, the unforeseeable risks of genetic manipulations {4}, and the poverty and social injustice generated by GMOs {5}. The article closes with a

disclaimer: the author admits that biotechnologies might be a blessing but, he emphasizes, only in due time {6}. The “in due time” argumen, in its various forms--from advocating a complete moratorium to invoking the precautionary principle for biotechnologies—is itself ideological:, a blanket argument that could apply to almost any potentially dangerous scientific-technological endeavor and is here only applied to biotechnologies. The very end of the article shows the attitude of the author, who adumbrates not only the commercial exploitation of GMOs but also “viruses and bacteria endowed with new and unknown forms of aggressiveness”. This last worry about GMOs evokes not only political or economic risks but also the frightening vision of monstrosity often associated with biotechnologies (Wagner & Kronberger, 2001).“Bisogna solo evitare che” (“it must only be avoided that …”) {6} which introduces the final clause of the passage cited, is both an appeal and a warning. It offers a sort of admonition or call to action against the lurking threats of genetically modified foods. This article presents many of the features of the ecological activist discourse on GM food: from the unforeseeable risks associated with the technology to the illegitimacy of patenting living organisms, from business exploitation and social injustice, even to characterizing GMOs as monsters.

7.2.4 GMO flour desecrates the Eucharist”

The last article I will consider in describing the representations offered of GMOs within the Catholic church was not written by a church representative. It is a news report of statements uttered by the archbishop of Genoa during a public encounter on food biotechnologies (Boero, 2004). It was printed in a national daily newspaper, La Stampa, which belongs to the FIAT financial group. La Stampa prints about 600.000 copies daily (Tiratura dei quotidiani italiani 2004 e 2005) and has a Liberal orientation.

La Stampa, Sunday 1 February 2004

Headline:

{1}Monsignor Bertone: “The Gospel is clear, the communion is not valid”

{2}The Archbishop of Genoa: GMO flour desecrates the Eucharist

Body of the article:

{3}<<If we want to be faithful to the sacrifice of Jesus, I don’t think that it is legitimate to use for the holy Mass a “genetically modified” Eucharist >>. This is the thought of the Archbishop of Genoa Tarcisio Bertone, expressed on Friday evening in Alasso, during an encounter on GMOs and biotechnologies (…)

(…)

{3}Cardinal Bertone (…) illustrated the position of the Church in respect to the debated and very current topic

(…)

{4}The Archbishop of Genoa said in Alasso: <<A genetically modified Eucharist? bread of wheat and wine from natural grape, this is what they have handed down to us and this is what is prescribed. I am not convinced of the legitimacy of (anything) else if we want to be faithful to what Jesus did.>>

{5}GMOs open a delicate ethical question, which for the Catholic Church, even if it is ready to contemplate and to analyze various future perspectives, at the moment translates into the <<precautionary principle>>.

{6}<<The first thing that should be taken into account should not be the economic calculus in the production of GMOs but the solidarity principle for poorer and needy countries.>>

(…)

{7}Bertone put on the forefront the lack of effective control on possible dangers, because <<investments in biotechnology research are largely made by the most developed countries and are in the hands of the private sector which uses internal systems of control>>and is thus hardly objective [in its decisions].

My aim in this section is to examine different positions expressed by members of the Church. It is thus of interest that the declarations of the Archbishop come three months after the position officially enunciated by Cardinal Martino I reported above. If anything, this report shows that the positions within the Church range widely. However, this newspaper article is not a transcript of the public encounter. The whole article is complexly layered and presents the views of the Archbishop through both directly reported quotes and paraphrases. The following layers of action (Clark, 1996: 15) are in place:

Layer 1 in which the Archbishop is talking at the public encounter

Layer 2 in which the journalist quotes and paraphrases the Archbishop

Layer 3 in which I am reproduce the article quoting only fragments translated into English (the translation itself constituting a further passage and occasion for meaning shift).

For the purpose of my analysis I consider the distilled content of the Archbishop's declarations because I take the Archbishop to be a highly placed member of the church, and thus socially relevant, whose views may be shared by others within the Church. However, I have no way to know if what the journalist reports corresponds to what the Archbishop said. I could perpetrate a fiction and take at face value what has been reported by the newspaper. However, the article itself constitutes a discourse in its own right, that makes use of the reported event to further a certain aim. It both (a) reports on the event, thus presenting it as newsworthy, and (b) tries to be interesting enough to be printed and sold in the newspaper. The agenda of the Archbishop while talking was different from that of the journalist who reported on his declarations, as it is different from mine in this instance. I use the article to make claims about representations of GMOs by relevant Church members. I approach the authorship and responsibility of the article, or of the quotes within it, keeping in mind Goffman's discussion of participant roles in conversation (Goffman, 1992). The writer of the article is sometimes the "speaker", when he only reports verbatim what has been said by the Archbishop, at other times the "author" when he rewords the archbishop's utterances, and to some extent the "principal", in the sense

that he is responsible for the overall packaging and message of the article. In principle it would be important to isolate the thoughts expressed by the archbishop from those expressed by the writer, something which is not easy to do. However, the object of my analysis is not exactly what happened, nor precisely what the Archbishop said—which is beyond my access--but rather what the article represents the Archbishop to have said. What counts as discourse available to the readers is what the article reports, because this is the text that directly enters public discourse and has the chance to influence the opinions, attitudes, and ultimately become part of the current sets of socially available representations of what GMOs are. Once more, the headline {1} provides the focus of the article and sets the focal point of the story. The first of the two sentences is rather puzzling, one needs to go to the next one in order to understand why "the communion is not valid". Once one has read further one can make the causal link between the two expressions and infer that GM flour desecrates the communion. It is unlikely that Monsignor Bertone uttered verbatim "La farina OGM sconsacra l'ostia" as reported in the headline; however this is what readers will most likely remember , as it is written in a bigger font and stands as the overall title. The declaration put thus sounds very much like an excommunication of GM flour. From the fragments I reported of the article we can legitimately gather that:

- there in no effective control on possible risks (of GMOs) because they are in the hands of the private sector {7}
- the church adopts the precautionary principle {5}
- These rhetorical positions (unforeseeable risks, appeal to precaution, mistrust of management of private corporations) are quite common and are often found as part of the standard repertoire of critics of biotechnologies. However, here new arguments are present, specific to religious discourse just as much as the positions adopted by Cardinal Martino in his official declaration considered above:
- from GMOs one cannot produce proper bread, "pane di grano" which is appropriate for the Eucharist {4}

- it is not legitimate to use a genetically modified Eucharist {2}

The logic of the argument is like that used by Cardinal Martino: it is exegetical, finding the answers to new problems in ancient sacred texts. In this case the answer is different from the one provided by the Cardinal, because the starting assumptions are different. Mons. Bertone focuses on the non naturalness of biotechnologies. From {4} it is inferred that GM wheat flour would not give "bread of wheat". So what would it give? the inference is left to the reader, but the vagueness encompasses the ubiquitous claim that GMOs are other than natural and thus uncanny, which in this case translates into a sort of impurity. Monstrous, non natural, impure and dangerous—these properties are then by extension ascribed to private corporations, which by definition cannot be trusted---this is the representation offered of GMOs in this article, at least as read through the ever shifting play of authorship between the journalist and the quoted Archbishop. One last thing should be said of this article, namely that the author claims that Mons. Bertone illustrated the position of the Church in respect to the GMOs debate {3}. If one did not know about the declarations of Cardinal Martino, reading "La Stampa" one might gather that the Archbishop represents the standpoint of the Catholic Church, whereas it appears that the Archbishop's position is in conflict with the stance officially taken by the Catholic hierarchy. Official or personal, the opinions on GMOs expressed by members of the Church clearly differ from one another diametrically.

7.2.5 Conclusion

It would be hard to find a social aggregate that could be more legitimately called "a group" than the Italian Catholic Clerics. They share values, beliefs and costumes to a considerable extent. Yet, I have shown that publicly relevant representations of GMOs offered by members of the Italian Catholic Church conflict with one another. Even within what might be described as a social group, whose members presumably share essential values and practices, there are multiple, transversal sets of ideologically controlled beliefs which may play a fundamental part in the interpretation of social facts. In particular, it seems that attitudes toward

private business and views of capitalism play an important part in the positions taken in the different texts presented. While the alleged impure nature of genetically modified wheat seems to worry only Genova's Archibishop, the relationship between private entrepreneurship / human agency and GMOs is a key topic in all four texts. At least with respect to attitudes toward GMOs, it is clear that more is at play than a single authoritative, exegetically appropriate evaluation of GMOs. Different dependable members of the Church choose to publicly offer representations of food biotechnologies that appeal to transversal and at times opposing sets of beliefs. This fact questions any attempt to easily associate group belonging with position-taking in the matter. It also questions any apparently obvious association between ideological positioning and social status.

7.3 The Paradys research

As I mentioned at the beginning of this work, during my participation in an international study funded by the European Commission I collected the case-specific data which I discuss in this dissertation. *Participation and dynamics of social positioning: the case of biotechnologies, images of self and others in decision-making processes* (PARADYS) UE -PARADYS HPSE-CT-2001-00050 sought to analyze governance practices across Europe regulating experiments with genetically modified crops. The study focused on practices of democratic participation and comparatively explored citizenship from an emic perspective, looking at how politicians, scientists, activists and lay people interpret differently the role of the public in regulating open air experiments with GM crops. The research required in depth study of national cases from sociological and socio-linguistic perspectives. Documenting two field trials proved to be a probe for the analysis of several aspects of the GMO issue. In particular we looked at different attitudinal standpoints defined as "social positions". (see Bora, Furcher, Hausendorf & Munte, 2001). Seven countries participated in the study:

Germany, Hungary, Ireland, Italy, the Netherlands, the U.K. and Sweden. The final report of the study can be found on the web site of Bielefeld University (Bora and Hausendorf, 2004)

7.4 Description of the experiment

The Institute of Botanical and Vegetal Genetics of a major Italian university obtained authorization for testing herbicide resistant rice in the open. The trial was authorized the 6th of May 2001, and experiments lasted to the end of 2005. The experiment was funded by the EU within a multinational study aimed at developing crops resistant to parasites. The Italian trial focused on cross pollination. Scientists wanted to see to what extent the genetically modified traits of the rice would transfer to an infesting type of wild rice, called Crodo which grows in the area. The GM rice was made resistant to a wide-spectrum pesticide, ammonium glyphosate which is marketed by Monsanto as Roundup Ready. The experiment procedure was the following: seeds of the glyphosate-resistant rice were mixed with seeds of the wild variety and planted. Once grown, the crop was sprayed with the herbicide so that only the herbicide-resistant rice would survive. In the first two years GM rice was planted twice mixed with the infesting variety and periodically sprayed with the glyphosate herbicide. In the three following years nothing was sown and the plants growing in the plot were monitored so as to detect potential passage of the glyphosate-resistance trait to the wild, infesting variety of rice. The soil was monitored for possible side effects of the growth of GM crops. The trial took place in a rural village of 1500 inhabitants in the north west of Italy. The territory of the council is mostly devoted to rice cultivation. Rice has been planted in the area since the late 15th century and is very much ingrained in local food habits and social life. Rice cultivation was the main occupation for both men and women. Traditional dishes show the importance of this cereal in the diet and local culture. Although traditionally engaged in rice production

locals are now largely employed in other activities. Only a minority is still involved in agriculture.

7.5 Description and development of the case

The rice field trial I discuss was that most recently authorized by the Health Ministry when the PARADYS research started in June 2001. We intended to speak to all the relevant parties, gather narratives and documents, and analyze how different actors described the ongoing experiment from their particular perspectives. We also hoped to be able to follow the development of the trial and any occurrence of public communication on the matter. I began by identifying all the relevant figures in order to contact them, to explain the purpose of the research, and to ask for their cooperation. During this process, I called the mayor of the village where the experiment was taking place to arrange an interview. It soon became clear that he was not aware that there was a GM field trial in his jurisdiction. Because local people were unaware of the trial, clearly there had been no talk about it in the village. Subsequent enquiries showed that it was commonplace in Italy for mayors and local citizens not to receive information about open air GMO experiments. This 'no-information, no-controversy' standing turned out to be representative of the Italian situation. The pattern of data collection in the village is heavily influenced by the relationship that developed with the mayor, who became interested in our research and started to educate himself on GMOs and the relevant legislation. The village mayor was thus an influential consultant and a valuable resource for the study. In particular, he was determined to make public the ongoing field trial, but he did not want to do so in a purely polemic way. The mayor wanted local people to receive appropriate information on the experiment from the responsible parties. He wanted to have some public illustration and explanation from the scientists and also from the politicians who had authorized the trial. In addition to establishing contact with the mayor and other local people, I also interviewed the scientists responsible for

the experiment, the civil servant in charge of Regional Agricultural development and the field inspectors. The fact that people in the village did not know abut the trial became a central feature of the case. All parties involved expressed their opinions about the absence of information. The topics of food biotechnology, science governance, public participation, and democracy were clearly linked in most participants' talk. Everyone not only offered an opinion about food biotechnologies but also took a position about the proper role for citizens with respect to an experiment with food GMOs. Faced with our curiosity, all the relevant parties cooperated and despite some concerns were willing to come forward and talk in public about the field experiment. The mayor eventually decided that he would organize a public encounter, and we helped him contact some of the key persons involved in the trial. With the help of the mayor, Giuseppe Pellegrini and I organized a focus group with key actors and a public meeting on the following day. The two events took place the 21 and 22 October 2002 in the main room of the local council house, almost one year after my first interview with the mayor. The public meeting was advertised in the local paper and as a result received some media coverage. Three national newspaper sent reporters, who produced three strikingly different accounts of the meeting. One article in particular published by Repubblica (Fazzo, 2002) had such an alarming tone that the Agriculture Minister Giovanni Alemanno decided with an unprecedented measure to suspend all field trials being run by the research institutes who report to the Agriculture Ministry. (Meldolesi, 2002). The scientist in charge of the experiment only after repeated requests managed to have his response to Fazzo's article published in Repubblica. The mayor of the village was interviewed during a prime time radio program on a national channel and in the following days received further requests for interviews which he declined. The polemic settled. I remained in touch with the mayor and kept him informed of further developments in our research while he in turn reported that nothing related to the experiment was happening in the village. In January 2003 I returned to the village and again, thanks to the

help of the mayor, recorded informal conversations with nine lay citizens on the topic of the trial and more in general on GMOs in food.

7.6 Extracts from the data:

I present here a number of extracts which offer different perspectives on biotechnologies. The choice of discussing certain quotes follows the overall logic of the study: from the large amount of data transcribed I have selected some exemplary pieces of interaction which display ideologies about GMOs expressed by the many social actors involved in the issue: citizens, scientists, biotech companies, the media. In making the selection I have tried to give space to competing discourses which emerged during the field study. Besides, I have tried to sort fragments of interactions which show the way arguments are constructed and how participants are literally "thinking with their mouths" about the GMO phenomenon. The field trial is the starting point for the expression of wider sets of beliefs about GMOs, which encompass theories of what they are, why they have been created, who benefits from them, and why people have the opinions they have about them. The discussion shows some of the functions the accounts and positions deployed have for the protagonists. Particular beliefs serve to preserve a certain identity, legitimize a certain state of affair, or to argue for a change in the current situation in favor of another more in line with one's manifest attitudes.

7.6.1 The scientist in charge: "Italians are terrified"

During an interview, one of the scientists who is conducting the field trial provides his account of why over time Italians are becoming the more and more hostile to food biotechnologies. In the transcript "Sci:" stands for "Scientist" and "Int:" for "interviewer". The transcript records false starts and cut- offs.

1	Sci;	e quindi,
2		per esempio quando mi studiano,e:,
3		l'andamento dell'attegiamento

4		dell'atteggiamento del po-
5		del della popolazione italiana
6		o del consumatore nei riguardi dei cibi: diciamo =
7		=transgenici fra virgolette
8		ehh nel corso degli anni noi vediamo che e:: i =
9		=contrari vanno aumentando,
		Sci: so, for example when they study, hmm, the variation of attitudes of the ma- of the Italian population or of the consumer towards foods, let's say transgenic in inverted commas, hmm, over the course of years we see that those opposed increase,
10	Int;	infatti
		indeed
11	Sci;	conclusione,
12		gli italiani stanno acquisendo conoscenza del =
13		=problema.
14		gli italiano stanno acquisendo conoscenza del =
15		=problema,
16		gli italiani sono gradualmente terrorizzati!
		and the conclusion is: Italians are acquiring knowledge of the problem. Italians are acquiring knowledge of the problem... Italians are gradually terrorized!
17	Int;	hmm
18	Sci;	come conoscenza del problema
19		quando poi alcune di queste inchieste son fatte =
20		=molto bene no,
21		perchè dopo dopo questa domanda
22		chiedono che cos'è il cibo transgenico?
23		non lo so. ovviamente.
24		addirittura ce n'era una bellissima
25		dove la a:: terza o quarta domanda era::
26		vorreste saperne di più? no.

how knowledge of the problem, when then some of these researches are done very well aren't they, because after this question they ask: what is transgenic food? I don't know. Obviously. There was even a really great one where the a… the third or forth question was: would you like to know more about it? no

Int; cioé percentuale alta di gente che dice non m'interessa,
so there was a high percentage of people that say I am not interested?

Sci; la maggioranza NON voleva saperne di più
the majority DID NOT want to know more

Int; e allora lì non c'è niente da fare
there is nothing to do then

Sci; per questo io dico che
se non partimano dalla scuola come fai a prendere,
il a: il cittadino medio,
e buttargli addosso una notizia
e pretendere che la per la percepisca con equità.
this is the reason why I say, if we don't start from the school, how can you take the a…: the average citizen and dump on him a piece of news and insist that he, that he receives it with equanimity

Int; ma
but

Sci; ma questo lo riferisco anche a me
anch'io posso influire eh in un certo
mOdo che mi fa comodo,
e: che ritengo che sia ee corretto,
but this I refer to myself as well, I too can exert influence in a certain way that

suits me, e…: that I judge to be correct

41 ma non è corretto nei riguardi di chi ha
42 ricevuto la mia influenza no
but it is not correct towards those who were influenced by me isn't it,

43 perché non gli ho forniscio nn- fornito
44 gli argomenti perché lui sia convinto,
45 semplicemente son stato abbastanza
46 bravo nell'affrontare e: l'esposizione,
47 nel portargli qualche esempio,
48 e nell'impressionArlo alla fin fine.
because I did not provide, did not provide the arguments for him to be convinced, I simply have been good enough in approaching the exposition, in giving him some example, in impressing him in the end.

49 Cioé stiamo facendo una guerra di influenze no,
50 non di conoscenza.
I mean, we are making a war based on influence, not on knowledge.

The interviewee provides an explanation for the increased hostility felt by Italians toward GMOs based on an analysis of the results of surveys measuring the attitudes of citizens toward the issue. The argumentative move uses evidential strategies to advance the main point. Surveys that claim most Italians are opposed to food biotechnologies threaten scientists engaged in such research. The threat is both symbolic and concrete. On the one hand, engaging in an activity disapproved by many is problematic for the image of one's work and function within society. Scientists in the early nineties faced with dismay the hostile reactions to biotechnologies. Many of these biologists, now professors, started university when the disastrous consequences of chemicals in agriculture were becoming public knowledge through books like Silent Spring (Carson, 1994). For many young agronomists the frontier in research became creating alternative ways to increase harvests without poisoning

the soil and destroying the environment (Charles, 2001). Biotechnologies seemed to represent the solution. To modify plants making them more robust and productive instead of heavily altering the environment seemed a revolutionary way to control pests and increase productivity while respecting the environment. However, many in the public did not share this view. The first victim of public hostility towards biotechnologies is the image of scientists within society. The threat for scientists, however, is not only symbolic. Research depends on funding, and funding depends at least partially on the popularity and support a line of research is receiving in the country. In Italy the number of authorizations to run field trial per year has decreased from dozens per year to zero (European Commission. Biotechnology and GMOs information web site). Both the social image and the resources available to scientists are on the line. In this instance the interviewee explains why the public does not support food biotechnologies. These macro level circumstances are reflected in the interviews as ritual face management (Goffman, 1967).The interviewee appears to defend himself and his work by proposing an explanation for attitudes toward GMOs in poll results. Because lack of support is undeniable, public hostility is either misguided, or scientists committed to biotechnologies are somehow to blame. In this instance the interviewee blames media, which "terrorize" Italians (line 16 of the translation). To describe the public which opposes biotechnologies as "being gradually terrified" has several corollaries. If Italians are being terrified by wrong information their attitude toward biotechnologies does not reflect reason and good judgment, rather it is the product of misguided emotions. By using the term "terrified", metapragmatically the scientist offers a picture of the public as emotional. According to the scientist's discourse, public opposition is irrational and based on lack of information and thus can be dismissed. The public is constructed not only as terrified, but also as ignorant and uninterested in learning more (lines 18 to 26). The rhetorical strategy of this discourse relies upon an apparently factual and rational account. The interviewee quotes a survey, framing what he says not as his own personal opinion but rather as objective fact. The discourse derives further indirect strength from the

voicing of an exchange between pollster and responder. That the public is ignorant and unwilling to change its ignorant condition is made inferentially available; it is a conclusion one gathers from the imaginary question and answer between the survey interviewer and the layperson, which the professor dramatizes as: “Would you like to know more? No”. At lines 3-4 there is an instance of lexicalization symptomatic of the view held by the interviewee. The professor uses the expression “del po”, then interrupts himself and self repairs (Schegloff, Jefferson & Sacks, 1977) with “della popolazione”; the content of the repaired expression can be inferred also by the change of article from masculine, used with “popolo”, to feminine, used with “popolazione”. “Po” is the first syllabi of “popolo”, the masses, an expression (with masculine gender, hence in agreement with *il*) heavily loaded with ideological connotations. Masses are by definition characterized by blindness and ignorance. The term is so charged with inter textual meaning that by itself evokes an elitist political standpoint. Describing those surveyed as the “masses” undermines the authority of the poll because the respondents of the survey are categorized in a disparaging way. Following the rhetoric of the interviewee, results don’t suggest that Italians have come to a well reasoned assessment of food biotechnologies, but that an ignorant and fearful populace cannot possibly formulate adequate judgments. Who would trust what “the masses” believe? The interviewee must have realized half way through that he was not using an appropriate designation and self corrects himself with “popolazione”, a more neutral term (of feminine gender, hence agreeing with the article *la*) for referring to the many people who, over time, have developed a strong distaste for biotechnologies. Towards the end of the fragment, at lines 37-48, the interviewee explicitly attributes the result of the surveys to misinformation, but also produces an account of the discussion over biotechnologies in which he shares responsibility for the poor quality of the debate in the country. “We are making a war based on influence not on knowledge,” the scientist says. Such a general statement, declined with the first person plural pronoun, is an admission that scientists, too, are to blame for the lack of support for biotechnologies. It might seem

contradictory that while defending himself and his colleagues the scientist would also spontaneously take some blame for the results of the polls. However, the discursive move is reasonable when seen in the context of the interview. Participants in social encounters have several agendas in place all the time. While attempting to achieve any goal, maintaining a positive image remains an essential element during any interaction (Goffman, 1967). Displaying balance and good judgment in the discussion is not only socially desirable; it is also fundamental for being believable. Having a personal investment in the matter under discussion can diminish the credibility of anyone making a point. Taking some responsibility for the poor understanding the public has of GMOs in this context can amount to the rhetorical downplaying of his own interest in the matter, what within DP is called stake management. By accepting some responsibility the interviewee shows himself to be reasonable and humble. As a consequence his claims are strengthened because he portrays himself as balanced and impartial, able to judge above the interests of his own vested interest as a scientist. The following extract comes from the same interview. The topic is how to include the public in the decision-making process that leads to the authorization of experiments like the one carried out by the scientist.

1	Int;	e noi anche ci ci occuperemo proprio
2		di come la gente partecipa alla decisione.
3		Ha senso come si può far partecipare la
4		gente se l'informazione è così specifica
5		è così per addetti ai lavori:
		and indeed we will deal with how people participate in the decision. How is it possible to have people participate if information is so specific, so much for insiders
6	Sci;	ecco io: ha ha
7		io lo vedo molto diffcile
8		eh cioé h mh idealmente son
9		perfettamente d'accordo
10		non vorrei che niente avvenisse senza il
11		consenso d di tutti
12		o il consenso eh della maggioranza

well, I, I think it is very hard., I mean ideally I perfectly agree, I would prefer that nothing happened without the consensus of everybody, or the consensus of the majority

MA come fai,
a: a raggiungere il consenso.
BUT how do you reach consensus.

Io direi che ci sono due strade,
Una è quella dell'educazione
I would say there are two ways. One is education

ma è molto lunga e difficile
perché è un'educazione vEra,
è qualcosa che parte dalla scuOla dove,
uno impara la biologia,
per esempio,
visto che siamo in questo campo,
la impara anche abbastanza,
in modo approfondito,
è in grado di capire i fenomeni,
di valutare che cosa vuol dire
un'interferenza in questi fenomeni.
but it is a very long and hard one, because it is a real education, it is something that starts from the school where one learns biology for example, as we are talking about this field, and one learns it well, in depth, one is able to understand phenomena, to assess what it means to interfere with these phenomena.

e: ci possiamo chiedere questo.
altrimenti intendiamo,
hmm che e: l'informazione segua::: le
comune strade.
hmm we can ask this. Otherwise we mean that information comes the normal ways,

ma le comuni strade chi le gestisce eh,

but the normal way, who manages it, uh

33		potremmo chiedercelo anche della scuola però,
34		insomma la scuola è rappresentata da
35		una molteplicità di docenti che:
36		sperabilmente hanno una loro preparaziOne,
37		e quindi trAsferiscono il loro sapere e:
38		agli studenti.
		we could ask the same question about school, but in the end the school is represented by a multiplicity of teachers that, hopefully, have their own competence and thus transfer their own knowledge to their student,
39		con gli alti e bassi che possono esserci,
40		comunque nell'insieme noi avremo,
41		un trasferimento di conoscenza.
		there can be ups and downs, but overall we will have a transfer of knowledge.
42		e:: ma se: usciamo da questa strada
43		chi è che ci fa l'informazione
		but if we leave this road then, who provides us with information
44	Int;	i giornali:,
		the newspapers
45	Sci;	i giornali.
		the newspapers.
46		(...)

In the above fragment the expression of stance is modulated using what Edwards calls counterdispositional constructions (Edwards, 2005: 265). While providing an answer in line with his own view of the situation, the respondent also claims that the situation is not in line with his own

inclination (lines 8-12).What the scientist argues for is presented as determined by external circumstances, which make it impossible to have things as he would like them to be. The scientist posits a distinction between the position he officially expresses - that the public should not be included - and his more authentic self, which would like to include the public in the decision making process. The disjunction allows the speaker to display that he is being democratic and at the same time argue against public participation. He argues that public participation in decisions concerning field trials cannot be implemented because the population is not ready for it. We are inferentially provided with the implicit axiom that in order to be fit for participating in the debate the public should be educated. From this perspective it is only fair to exclude the public because the public is unfit to take part decisions that depend on science . The discourse of the interviewee has a further corollary: that if people had a better understanding of the natural biological processes consensus would be reached. He implicitly equates knowledge and consensus. Education is offered as the main way to increase knowledge and as a logical consequence to achieve consensus. The rhetorical construction of arguments for excluding the public from the decision making process has another aspect, namely the trivialization of the way in which such participation might be carried out. The following extract is from the same interview:

1	Sci;	perché quando la commissione esamina
2		le domande,di di sperimentazione,
3		comincia a vedere
4		ma che cosa hanno introdotto
5		da dove l'hanno preso,
6		in che specie,
7		che scopi ha come si esprime
8		cosa dice la bibliografia
		because when the commission examines the applications for doing experiments, it starts looking at: what have you introduced, where did you get it from, in which species, what are the aims, how is it expressed, what does the bibliography

say

9		e alla fine dice si la prova la fate non la fate. *and in the end ((the commission)) says yes you can or you cannot do the trial.*
10		E invece qui,
11		noi di e: se si dovrà dire semplicemente
12		guardate che si vorrebbe fare una prova
13		con un organismo geneticamente
14		modificato la volete o non la volete
15		eh in sostanza è questo *instead here, we, we will have to simply say: look we would like to make a trial with a genetically modified organism do you want it or not, uh, in the end this is the thing.*

The argument here clearly opposes one acceptable way of making a decision, which implies understanding of the processes and consequences of a field trial, (lines 1-9) to a bad way of making a decision, which is here described as a decision based on popular plebiscite ("do you want it or not?"). The interlocutor is left to infer how best to assess if a field trial should be run or not. Here as in the previous example the speaker trivializes the suggested alternative course of action as obviously so bad that anyone with good judgement would agree with him that public participation in the decision-making process would be disastrous. The argument is further developed to its obvious consequences:

1	Sci;	e domani
2		affronteremo in un modo: più democratico le cose. *and tomorrow we will approach things in a more democratic way.*
3		per adesso io:: ritengo,
4		che,
5		se esistono commissioni di esperti con,
6		che già,
7		hanno una loro composizione,

but for now I think that, if there are commissions of experts which, that already have, they have their own varied composition,

variegata non è che siano tutti i: ricercatori
che si governano da soli no?
it is not that they ((are composed)) by all researchers that rule themselves, isn't it,

se c'e' una commissione che e- da
esprime e: il suo parere
da o non da l'autorizzazione
mi pare più che sufficiente.
If there is a commission that provides its opinion, give or does not give the authorization, this to me is more than enough .

si potrà studiare come: allargare
ovviamente questa base
o o come diversamente e costituirla
hmm
obviously one may study a way of enlarging this base ((of decision makers)) or ((one may study)) how to construct ((this base)) differently,

ma io non penso che si possa hmm dare
uun peso rilevante,
a: l'impressione di chi non possiede:: =
=l'argomento.
ecco
but I don't think that one can attribute a much weight to the impressions of those who don't master the subject

int; sembra molto chiaro
well it is very clear

sci; forse non è molto bello ma,
non,è inutile che ti dica un'altra cosa
ecco.

maybe it is not very nice, but it is of no use that I tell you something else, that's it

In this last extract from the interview a particular lexicalization offers a window onto the ideological standpoint of the interviewee. The scientist uses the term "impressione" to describe whatever grasp the public would/could have of the key features of a field trial. Impressions are by definition the result of a superficial appraisal of a phenomenon and thus are unreliable. The scientist thus positions the public rhetorically as incompetent to participate by inferentially constructing it as able to have only "impressions" about the topic, and thus rightfully excluded from the decision making process, at least for the moment. Remarkably, the expression involves a fairly straightforward manipulation of the interlocutor, who is left to either accept the scientist's term or openly challenge it. The speaker is aware that what he says might sound elitist and, following my comment on line 22, he acknowledges that his position might be "not very nice"; but he is also ready to stand by his point, claiming to be frank. The scientist points out that the Commission which takes decisions about field experiments has a varied political composition. The plural composition of the deciding board is argued to guarantee the appropriate level of democratic decision making. The scientist seems to imply that the arguments of those more critical or cautious are already given a voice within the decision-making process.

7.7 From the public debate

The following extracts come from the public debate organized by the village mayor. The mayor chose the following title for the public encounter: "Public debate: food experiments; participatory tools of citizens." As the title already makes clear, the explicit focus was on democratic aspects in experimentation. During the debate there was much discussion about the features of GMOs, but the topics shifted to a wider set of interrogatives. The council's main assembly room was filled

to capacity with about 70 people. There were 14 invited participants: the scientist in charge of the trial, one appointed scientist responsible for monitoring the safety of the experiment, farmer union representatives, customer union representatives and several local politicians. Invited speakers sat at a U shaped table facing the public. Digital audio recorders picked up sound across the room while a standing videocamera focused on the invited speakers. A public debate is a situation in which displays of ritual face are particularly relevant. I refer to the notion of "ritual face" as the ensemble of positive social attributes participants will think a person has claimed for him/herself during a social encounter (Goffman, 1967). Attributes of competence, honesty, and worthiness are always implicitly claimed. They can be confirmed or called into question during social encounters. In controversies, ritual faces are particularly exposed and subject to challenge. The possibility of gaining or losing face was clear to the invited speakers, as the meeting was potentially an occasion for laying blame mounting and protest. It was essential for all protagonists to represent themselves as worthy of trust and esteem. One can guess that everybody attending the meeting had a particular agenda for the evening. The scientist came to explain the trial, but also ultimately to defend his work and persuade a sceptical audience that the experiment was safe and worthwhile. He was aware that he could be criticized for his work, and indeed he became the object of criticism and polemic at the meeting and in a newspaper article in the following days. The scientist was not the only one likely to be criticized. Noticeably, the invited politicians all emphasized that they had no idea that the trial was being carried out. They claimed to have been caught by surprise by the news. Unsurprisingly, politicians advocated that the public be informed and that great caution be exercised with biotechnologies. The village mayor was in the favorable position of having uncovered a potentially problematic situation. As we shall see, during his introductory speech he made very clear his intention to share information and empower his citizens. Still, he, too, was subject to criticism. Citizens might approve his initiative, but they might potentially blame him for not having informed them earlier; furthermore, they might be expected to devalue him in his role as mayor

for being insufficiently well informed. The meeting represented much more than a locus for the exchange of information between scientists and citizens of course. Many social rituals occurred: reciprocal congratulations and declarations of esteem, evaluation of the situation and of the conduct of those present and absent. Rights and duties were negotiated. The meeting is an exemplary social situation in which the expression of attitudes and beliefs goes hand in hand with the voicing of social and strategic concerns. In sum, it is a good setting for researching how systems of Social Representations are displayed and how persuasive discourses collide with one another in the slippery, dangerous terrain of a public debate. Here, even more than in interviews, I see persons arguing for setting particular views of food biotechnologies against each other in order to defend both their personal views and their social personae. Exchanged and challenged are both visions of GMOs and views of the protagonists, all in the context of a debate which purports to advance different perspectives and to win over a sceptical audience. Beliefs and polemics are tightly linked with identity and social worth. My analysis of the content and functions of the text does not, therefore, ignore the aims and purposes of the participants.

7.7.1 "It is a matter of democracy"

The following fragment comes from the village mayor's introductory speech at the beginning of the encounter. I have made an effort to preserve in the translation some features of the speaker's style (the subject of the sentence is often left implicit, and there is loose concordance between subject and verb).

1	Sindaco; e direi che contemporaneamente bisognerebbe	
2	anche aderire	
3	a un appello che è rimasto invece un po'	
4	più defilato e nascosti	
	and I would say that at the same time we should also adhere to an appeal which has remained a little more hidden,	
5	che è quello di emergensi e di gino	

6	strada, uno straccio per la pace, *which is the appeal of emergency and of Gino Strada; a sheet for peace,*
7	e::: appello con cui invitava a:,
8	esporre e può darsi lo faremo anche noi
9	giovedì abbiamo consiglio comunale
10	decideremo insieme e:, *an appeal with which he was inviting to lay out, and it is possible that we will do it as well on Thursday,[when] we have the council meeting and we will decide*
11	cosa fare se prendere iniziative,
12	e: di qualche tipo
13	magari anche soltanto appendendo una
14	bandiera bianca *what to do if take the initiative of some kind maybe even only waving a white flag*
15	per aderire anche noi a queste iniziative
16	con cui si cerca di mantenere ancora una
17	volta la pace *to join us as well to this initiative with which once again one attempts to keep the peace*
18	e lasciare che siano le diplomazie a
19	parlare e non le armi. *and let diplomacies not weapons do the talking.*

Opening the meeting the mayor informs the audience about the fact that he is supporting a pacifist campaign. He does so using a deontic modality ("bisognerebbe") which expresses the moral opportunity of joining the initiative. It was the end of October 2002, and in Italy there was fierce debate about the wars in Afghanistan and Iraq. Supporting the pacifist campaign mentioned by the mayor involved hanging a white flag.outside the council offices The initiative had been promoted by a medical doctor who became famous in Italy for his pacifist stancet. Doctor Strada is the founder of an NGO which provides medical care to war victims all over

the globe. Doctor Strada accepted the description of "absolute pacifism" for his position (Gannini, 2003) and declared that he considered the current U.S. President the new Hitler (Giannini, 2003). The introduction of the mayor has little to do with the theme of the public encounter. However, it works as a positioning device and identity marker before both local and "foreign" audiences. The mayor has a clear political affiliation; he belongs to the left political party (PDS[11]). By declaring support for the campaign of a radical pacifist, the moderator presented himself to the public as an engaged "dove." This and other details of the mayor's self presentation probably are the reasons why he was labeled "a bit of a no-global mayor" in a newspaper article in the following days (Fazzo, 2002). Being the host, the mayor informs participants about the rules to be followed during the encounter:

1	Sindaco;	vi spiego intanto come,
2		e::: funzionerà il dibattito,
		meanwhile I explain to you how the debate will work.
3		io sarò il moderatore,
		I will chair
4		e::: e direi di attenerci
5		se siete d'accordo tutti quanti,
6		ed una regola non scritta ma semplicissima,
		and I would say that we should follow, if you all agree, anon-written but very easy rule,
7		che è la regola hm:::: h,
8		che c'è e c'è sempre stata
9		da quando io sono presente
10		in questa sala consiliare
		which is the rule that is in place and which has always been in place since the beginning of my presence in this

[11] *Partito Democratico della Sinistra.*

council room

11 una regola di democrazia, di civiltà,
a rule of democracy and politeness

12 chi deve parlare,
13 è sufficiente che faccia un cenno,
14 e verrà data la parola.
whoever has to speak, it is sufficient to make a little sign and the floor will be given.

The speaker makes an appeal to democracy in allocating turns for the debate. He also at least in principle formally acknowledges the audience's opinion about the rules, ("if you all agree" at line 5). This is another feature of self presentation which makes no reference to the GMO issue but indicates the values this mayor appreciates and personally defends, as the parenthetic "since I have been present in this council room" at lines 9 - 10 shows.

7.7.2 "A much bigger force"

After having explained why the encounter had been organized, the mayor reads a speech that contains his personal statement on the theme under discussion. He gave us a copy of his speech afterwards and asked us to bring it to the Biotechnologies Interdepartmental Commission. We did so a few days later when we met with the Commission in Rome. I present here a fragment of the introductory speech. The mayor recounts how during our first interview he came to know about the rice experiment occurring in his council territory. He then moves on to what in his view is "the problem" with biotechnologies.

1 Sindaco; fu allora che seppi
2 che anche sul nostro territorio,
3 ((omissis))
4 si svolgono tali esperimenti.
it was at that time that I came to know that in our territory too, ((omissis))

these experiments were taking place.

va detto subito per chiarezza ed onestà,
esperimenti regolarmente autorizzati dal
ministero,
e di conseguenza perfettamente
organizzati e sotto controllo.
This must be said immediately for fairness and clarity, ((these are)) experiments that have been authorized by the ministry and thus are perfectly organized and under control.

il problema non è quindi per noi questa
sera,dove e quali esperimenti,
cioé scatenare una sorta di curiosità
locale,anche perché ripeto,
questi esperimenti sono regolarmente autorizzati.
thus the problem for us tonight is not where and which experiments, that is, to stir up a sort of local curiosity, also because, I repeatt, these experiments are officially authorized.

il problema è invece di altra natura.
((2 secondi))
The problem is of different kind ((2 seconds pause))

hhh ciao((a delle persone appena entrate))
hello (to some people who just arrived))

?; sera
good evening

sera ((la gente risponde))
good evening ((people reply))

Sindaco; sappiamo e o riteniamo di sapere,
che i percorsi delle biotecnologie
e::hhh possono dare forma ad =
innovazioni di portata epocale,

we know or we think we know that the paths of biotechnologies can give shape to innovations that affect an epoch, ,

e questo lo dico,
da incompetente,
da incompetente,
and this I say as incompetent, as incompetent

non sappiamo se in bene o in male,
o un pò tutte e due le cose.
we don't know if for the better or for the worse, or perhaps both things

nel senso che vi sono molte prospettive
anc-
a noi ancora sconosciute.
I mean that there are many perspectives still unknown to us.

hh vi sono molte posizioni
possiamo dire le più disparate,
riguardo al tema degli ogiemme,
on the subject of GMOs there are many positions, we can say the most diverse ones,

hh alcune di esse sono perfettamente scientifiche
vale a dire quelle degli scienziati
o di chi vi lavora da vicino.
some of them are perfectly scientific, that is, those of scientists, or of those who work close to them ((biotechnologies))

altre sono comunque tecniche,
ad esempio le posizioni,
degli ambientalisti.
other ((positions)) are also technical, for instance environmentalist positions.

hh poi ci sono tutte le altre
come la mia ad esempio,

che io definisco del cuore.
and ultimately there are all the other((positions)) like mine for example, that I define of the heart,

e si badi bene non dico,
e::: della testa ma del cuore.
and take good note I don't say of the head but of the heart.

l'unico ragionamento che saprei fare è questo,
speriamo che le biotecnologie possano
cambiare il mondo,
the only reasoning which I could make is the following: let's hope that biotechnologies can change the world,

(.)
che possano far crescere il frumento nel
deserto o in mezzo al ghiaccio,
che possano guarire da malattie
ed altro ancora.
that can make wheat grow in the desert or on ice, that they can heal illnesses and other things.

ma la storia ci ha insegnato come
molte volte al dilà delle scoperte,
degli scienziati della scienza,
alla fine di ogni ragionamento
possa subentrare una forza ben più grande,
but history taught us how, often times, ahead of discoveries of scientists, of science, in the end of every reasoning a much bigger force can intervene,

hh che bandendo anche solo alcuni degli
aspetti etici
che sono importantissimi,
possa prendere il sopravvento su tutto e su tutti.
((a force)) that excluding even some of the ethical aspects, which are extremely

	important, can overpower everything and everyone:
62	vale a dire,
63	l'economia.
	I mean economy
64	e questo credo sia il rischio più grosso.
	and this I think is the biggest risk
65	è un pò come la globalizzazione,
66	quella buona,
67	quella che ci dicono essere buona
	(omissis)
	it is a bit like globalization, the good one, the one they tell us is good
	(omissis)

This long stretch of talk offers a series of features, some at the micro level and others at the macro level, which show how the GMO issue is framed. It is reasonable to expect that not everybody in the audience knew about the experiment in the area. The mayor delivers to his community the information that experiments with GMOs are taking place in the area in an indirect way. The information is inferable from the presupposition "I came to know that" at lines 1 and 2. "To know that q" presupposes "q". The mayor clarifies that for him the problem is not the ongoing experiment, which he pointed out had been duly authorized and so should not unsettle anyone. I know that he was concerned about the audience's reactions and that he pondered for a long time--for months in fact--whether and how to organize a public encounter so as to be fair both to his citizens and also to the scientist, who might suffer undesirable consequences. Several field trials have been destroyed in Italy; given the concerns expressed by scientists and by the authorizing authorities the mayor was afraid of episodes of vandalism that might affect the experiment. The fact that the speaker poses emphasis on how he came to know about the experiment, points to one of the core issues of the whole case.

"The problem is not" (line 10) presupposes the implicit information that "there is a problem". "The problem is another one" introduces the heart of the mayor's argument, introducing a link between biotechnologies and globalized capitalism. The latter is characterized by a ruthless search for profit, a blind force which overwhelms even the best intentions. According to this discourse, biotechnologies are understood in the terms of a powerful scientific discovery which can be turned to bad purposes by the rules of the market. The details of the speech are important to get to the main point of the argument. At line 20 the speaker self corrects, hedging his words and thus changing the meaning of his statement. He says "we know or we think we know that", in which the difference between the first and the second version of the sentence is the level of epistemic engagement that the speaker displays with the rest of the clause. While "we know that" presupposes a fact, "we think that we know that" provides an oppositional stance to the underlying proposition.. "We think we know" means that "we" are most likely wrong. The belief so hedged refers to the positive potential of biotechnologies. Later talking about globalization the speaker uses a similar distancing strategy. He says "la globalizzazione, quella buona, quella che ci dicono essere buona". With the same strategy the speaker self corrects one expression, transforming it into another with rather opposite meaning. In the first case he seems to imply that he believes in the existence of a good globalization, while the self correction makes it clear that a "good globalization" is part of somebody else's discourse which claims, perhaps wrongly, that "good globalization" exists. The level of epistemic adherence to the statement is skillfully hedged so that it now does not represent the belief of the speaker but rather mentions the claims of some undefined other to which the speaker potentially opposes his own discourse. "I say this as incompetent, as incompetent" (lines 24-26), provides a further element of self presentation which implies humility and modesty. This self positioning goes along with the "position of the heart" which the mayor later advocates for himself over the biotechnology issue. The adversative conjunction "but" (line 53) introduces the most rhetorically pregnant part of the mayor's argument.

The problem is not biotechnology; the problem is economy. The syntactic structure polarizes the opposition and focuses attention on the "economy" side, the key element of the speech. The desiderative "let's hope that" ("speriamo") at line 46 works as a "counterdispositional" device (Edwards, 2005). The speaker rhetorically seems to wish for something which in fact goes against his own best judgment. The mayor would like things to be in one way but contrary to his own hopes they are not so. The argument is developed with the use of evidential devices. " "History" is used here as the proof that biotechnologies will not in fact turn out to make major improvements for humankind. Once again the point is made via presupposition: "History has taught us that" introduces a factual reality, namely that the forces of economy, banning ethical concerns, can overcome all and everybody. The speaker defines his own position as that "of the heart", setting himself apart from both scientific and environmentalists standpoints. He claims for himself a pure perspective, beyond stance, retorically putting himself outside the arguing circus of interested parties. His self positiong frames his representation as the uninterested judgment of an honest, good hearted person. The ideological load of the speech resides in the analogy between GMOs and "good" globalization. The analogy is part of one specific stance about biotechnologies, which describes them as the product of the same imperialistic, tentacle-like economy which oppresses a large part of the world by condemning it to poverty and exploitation.

7.7.3 "J'accuse"

In this last fragment the speaker develops further the theme of globalization, an argument intertwined with the way in which he constructs himself and the audience via his discourse. The mayor is talking about the current meeting (the pronoun "l'", which stands for "lo" on line 2 refers to the meeting).

1	Sindaco;	io mi sono domandato
2		perché l'abbiamo fatto noi,
3		noi piccoli in questo piccolo pezzo di
4		terra italiana,

in questo angolo di mondo.
I asked myself why is it that we have organized it, we that are small, in this little piece of Italian land, in this remote corner of the world.

alla fine però qualche risposta,
l'ho trovata.
in the end though I have found an answer.

esistono le biotecnologie
e ci arrivano dall'alto.
materiale pronto,
dalle televisioni e dai mass midia in generale,
biotechnologies exist, and they come to us from above. ((they are)) ready-made material, ((coming))from televisions and mass media in general

in realtà nessuno di noi ne sa più di tanto,
e forse si è più preoccupati
hm hm si è preoccupati della questione.
In fact none of us knows a much about it, and maybe ((none of us)) ever worried much about it.

hhh d'altronde non si può immaginare
che la gente si incontri per la strada,
e si metta a parlare di bioteconologie
anziché dell'ultima partita di calcio.
after all, we cannot imagine that, when meeting in the street, people would start talking about biotechnologies instead of talking about the latest football match.

hh un altro motivo per cui ritengo utile
hh che la gente ne parli,
è che bisogna evitare che che accada,
e questo è un riferimentolocale,
e::: semplice e:::
che si può avvicinare alle posizioni
alle idee della gente,

come ad esempio,
per la ripetizione dei segnali della
telefonia cellulare.
((but))another reason why I believe it is useful to have people talking about it is that we have to avoid that, and I am referring to some local issue here, ((a))simple ((example)), that can be close to the to the ideas of people, like for example what happened with mobile phone antennas.

prima abbiamo fatto gli impianti
e poi i poveri amministratori locali,
cioé i più vicini alla gente,
si sono trovati s
enza conoscenze e senza mezzi,
ad affrontare le paure,
della popolazione.
first we built the antennas, and then poor local administrators, the ones closer to people, found themselves without knowledge and without means, facing the fears of population.

hmmm hmm questo è ovviamente un giaccus
che io personalmente rivolgo alla
che ha,
legislazione,e::: estraniato la conoscenza
nei piccoli luoghi.
this is obviously an accusation that I lodge against the legislation, that cut off knowledge from small places.

he::: questo soprattutto
non per rendere tutti edotti scientificamente,
ma per eliminare dalle nostra menti e dai

nostri cuori una sorta di paura e preoccupazione.
((I say)) this especially, not to make everybody scientifically informed, but in order to get rid of a sort of fear and

worry from our head and our hearts.

46 hhhh un'ultima osservazione,
47 ho trovato in alcuni documenti
48 la conferma che quello che stiamo
49 facendo,è sì pionieristico,

50 ma reale
51 e nello stesso tempo importante.
((I make)) a last observation. I have found in some documents the corroboration that what we are doing is pioneering but real and at the same time important.

52 sono dei documenti c
53 he ho hh scaricato da internet,
54 (omissis)
they are documents which I have downloaded from the internet.

The speech sounds almost mawkish when written down, but was quite effective when spoken in a tone without sentimentalism. Clearly a multi-faceted dichotomy is set in place through a polarization which relies qualifiers: on one side we find the good, genuine things, "small people" and "small places" in "a corner of the world" and "poor local administrators" like himself that are "closer to people". On the other side are blind forces at play: economy and globalization. Biotechnologies are qualified in turn as "ready made material", which "comes from above", through the mass media. They are described as something alien and distant from the lives of normal people who cannot be expected to approach them easily or spontaneously interest themselves in them. The speaker seems to express the concern that a whole little world might be ignored or eventually swept away by these overwhelming forces. He constructs himself as a sort of hero bringing light where there is only obscurity, in order to eliminate "from our minds and from our hearts a sort of fear and worry". From his narrative he - along with the community he represents, as the inclusive "we" suggests - is doing

something “pioneering but real and at the same time important”. The mayor evidently takes pride in having organized the meeting. He also metapragmatically defines his own speech as a “J’accuse” against the legislation which does not provide for information to the public. The expression “J’accuse”, commonly used in Italy, by whoever knows about Emile Zola and the Affair Dreyfus, spells courage and honesty against general hypocrisy. It also pictures the actor as willing to risk unpopularity while fighting injustice. Overall, it evokes civic heroism. The mayor is clearly offering a picture of himself as good and admirable; his talk expresses not only the self-description of an estimable mayor, but a view of the world.

7.7.4 “Nobody knows which effects they can produce”

In the following fragment, a citizen--a woman in this case--argues about the safety of GM foods with the scientist in charge of the field trial. The dialogue includes the topical line “Americans have been eating GMOs since nineteen eighty six” which in the fragment analyzed aboce is polemically challenged. Here ‘S1’ is the citizen, ‘Scienziato’ is the scientist in charge of the trial, ‘Pubblico’ is the audience.

1	S1;	io volevo domandare,
2		e:: visto che siamo nel campo della =
3		=sperimentazione,
4		in realtà
5		sugli ogm non si sa poi
6		quali effetti possano ave:re:,
7		non solo dal punto di vista ecologico
8		<sulla natura,>
9		ma ancora: per esempio come alimenti,
10		no non si sa.
		I wanted to ask, given the fact that we are in the domain of experimentation, in truth nobody knows what affects GMOs can produce, not only from an ecological point of view, about nature, but also for example as food, it is unknown

11		n- non penso che non ci sia nessuno ecco
12		oggi:,che dica: va tutto bene:
		[
		I think that today there is no one that says it is all ok,
13	Scienziato;	hmm hh be:: :no. sono:, è dall'ottantasei,
		[
14		che:,
15		negli stati uniti:,
16		milioni di persone mangiano ogm.=
		hmm well no. Millions of people in the United States have been eating GMOs since nineteen eighty-six
17	S1;	=si si: ma infatti:,
		yes yes but that's what I mean((laughs))
18		((ride))
19	Pubblico;	((risate generali))
		((Everybody laughs))
		[ ]
20	S1;	non non so vedremo, cioè
21		voglio dire siccome non è no
22		la prima sperimentazione utilizzo di he::
23		di materie che poi dopo anni si dimostra che
24		forse non devono essere non dovevano
25		essere utilizzate:,
		I don't know, I don't know, we shall see, I mean considering that this is not the first experimentation, use of substances and then, later on, there is proof that they should not have been used,
26		no: ma,
27		la domanda che volevo fare è perché,
28		(.) questa sera,
29		(.)ve io che abito a XXXXX

vengo a sapere che si sta facendo una =
=sperimentazione
but the question I wanted to ask is, why is it the case that only tonight I, who live in XXXXX, come to know that there is an experiment taking place

che io non sono una,
non ho riso:,
quindi no è una cosa non non è che mi
interessa personalmente
I I am not a, I don't grow rice so it does not interest me personally

però dico visto che abito a XXXXX
come mai solo questa sera vengo a sapere che,
(.)nel territorio del comune di XXXXX,
but because I live in XXXXX why do I come to know only tonight that in the territory of the council ((omissis))

((omissis))

((two minutes gap))

io penso che quello sia,
sia una una pecca ecco e mi fa,
aumentare i miei dubbi,
(.) aumentano i miei dubbi
di cittadina

nel momento in cui mi si informa,
(.) due anni dopo,
(.) invece che,
(.) prima.
I think that this is a a fault, that's it, and it increases my doubts as a citizen, my doubts as citizen increase, when one is

informed two years after rather than before

50		perché la cosa colpisce
51		fa dei sospetti
52		fa diventare sospettosi
53		siamo diventati sospettosi viste le esperienze,
54		(.) passate no di altre: di altri:,
55		di altre materie eccetera:, *because the thing is striking, it creates suspicions, it makes one become suspicious, we have become suspicious given past experiences in other matters, that's it*
56	Scienziato;	he::: e::: e:: [
57	Sindaco;	io: posso? scusi ((allo scienziato)) *I, can I? sorry ((to the scientist))*
58	Scienziato;	prego prego *please, please*
59		((omissis))

In this exchange ideology is expressed via humor. The citizen voices a common argument against biotechnologies: they present "unforseenable" risks which cannot even be imagined by scientists. Nobody knows the consequences of using biotechnologies. The scientist objects to the claim that "nobody knows". He does so deploying what he clearly believes to be a good piece of evidence, at least for the current circumstances. If GM foods have been used in the U.S. for years with no adverse effects, we may infer that they are not harmful. The reaction of the citizen, and above all the burst of laughter from the public which follows her remark, tells us that the audience thinks otherwise. What to the scientist is a good argument, rather than putting a dent in the position of his opponents, simply confirms their previous beliefs. The punchline "yes yes but that's

what I mean" at line 17 is not reducible to any specific reference. The citizen jokingly argues that contrary to what the professor declared, the negative effects of GMOs are indeed showing in America. She is referring to some negative character of Americans, which is left unspecified. Everybody in the audience reacts with a loud laugh. They seem to agree with the citizen.

7.7.5 "Leukemia, tumors and so on and so forth"

1	sindaco;	io mi auguro che ,
2		nel corso degli anni
3		poi ci siano tutti degli sviluppi
4		per cui le biotecnologie,
5		hh possano diventare il toccasana dell'umanità,
		I wish that, with the passing of years there will be all the developments for which biotechnologies will be able to become the panacea of humankind
6		però,
7		oggi come oggi,
8		hmmmmm diciamo che noi,
9		hmm da comuni mortali
10		non abbiamo certezze e:: scientifiche:
		however, as of today, let's say that we, common mortals don't have scientific certitudes,
11		e: da scienziati ma abbiamo:,
12		qualche preoccupazione
13		qualche paura quindi:,
		but from scientists, instead we have some worries, some fears and so on
14		((omissis))
15		a livello di alimentazione
16		non sappiamo se queste cose faranno
17		bene o faranno male

at the level of foods, we don't know if these things will be good or will be bad

((omissis))
altrimenti ripeto
come ho detto prima
corriamo il rischio di ritrovarci,
come per tante altre cose,
abbiam lasciato costruir le case
sotto i tralicci dell'alta tensione,
hh e poi abbiamo scoperto
che forse provocano le leucemie
i tumori eccetera eccetera,
otherwise, I repeat what I said earlier on, we run the risk of finding ourselves in the same situation we found ourselves in with other things; we have allowed building houses under the electricity power lines, and then we have discovered that maybe they produce leukemia, tumors and so on and so forth,

In this fragment the mayor reasserts the lack of certainty about the consequences of biotechnologies. The passage follows the previous extract. The mayor is still responding to the scientist's claims that there is reassuring evidence about food biotechnologies. The mayor opposes "scientists" to "common mortals", where the former have "scientific certitudes" and the latter have "fears" and "worries". The discourse positions scientists as the ones who hold certainties. Scientists are constructed in opposition to 'normal' people who instead have worries. What results from the oppositional characterization is a representation of scientists as bold and arrogant in the face of legitimate concerns. Probably no scientist would subscribe to such a representation of the category. Rather, scientists are cautious with certainties and hold findings to be provisional. Again, the mayor states that "we don't know if these things will be good or bad". He then anchors biotechnologies to another issue linked to public health. The loose association proposed between

tumors and the potential effects of food biotechnologies is clearly bound to sustain a negative representation of food biotechnologies.

7.7.6 "I am a citizen"

In the following fragment two standpoints are enacted in opposition to each other. The conflicting discourses construct different worlds. The exchange occurred at the public meeting between a citizen (a woman) in the audience and a biotechnology professor. The professor represented the biotech industries in Italy (AssoBiotec). The citizen involved in the exchange was very active during the encounter. She questioned the invited speakers and engaged in the discussion. She was one of the few people in the public to take the floor several times. She became the designated interlocutor for many of the invited speakers. The interaction has the features of a conflictual conversation, characterized by the expression of disagreement, interruptions and overlaps. The professor proposes a view in which responsibilities are assigned by law and, accordingly, citizens have nothing to do with the matter of field trials. The citizen instead holds that she has a right to be involved in decisions that have potential impact on her life. Furthermore, she states that, in the light of past experience, she has little faith in the assessments of decision makers. Lack of trust in decision-makers is a core point in the debate over food biotechnologies (Bucchi & Neresini, 2000; Bucchi, Neresini & Pellegrini, 2002; Bucchi, Neresini & Pellegrini, 2003, Bucchi & Neresini, 2004). In this example, the professor also invites the citizen to agree on the principles which govern his own view. The attempt fails. The citizen instead offers her own view of how things are, and how they should be, based on an altogether different set of expectations. The professor takes the floor after complaints have been voiced that local people had not been informed about the experiment. He asserts that people should not complain for not having been informed. The legal authorities are responsible people, and everything is under control. PRA is the biotechnologies professor, S1 is the citizen, SCI is the scientist in charge if the experiment.

PRA; esiste un grado di responsabilità
diverso in funzione della:,
diciamo delle funzioni,
h che uno ha nello stato,
nel nell'amministrazione
e via di seguito quindi,
hh non si deve far dipendere tutto,
h dall'informazione dei cittadini.,
there is a different degree of responsibility depending on the function one has let's say in the country, in the administration and so on, and as a consequence we should not have everything depend on information for the citizens

h io vorrei chiedere alla signora,
lei non si sente,
h (.)
rassicurata,
dalle spiegazioni del professor SCI?
da quelle date dal:
h I would like to ask the madam, don't you feel reassured by the explanations of professor SCI? by those given by

SA1; [avrei preferito che me le =
=dessero prima,
[I would have preferred that they had given them to me before,

((incomprensibile))
perché io sono: ((incomprensibile))
((incomprehensible)) because I am [((incomprehensible))

PRA; [l l'ho l'ho capito signora,
ma diciamo un medico non può
consultare tutto:paziente per paziente
tutta la popolazione,

22		uno:,
23		i responsabili,
24		devono prendere le loro responsabilità,
		I I understand madam, but let's say a doctor cannot consult with all patients, all the population, one, the responsible persons have to take their own responsibilities
25		(.)
26		se no cominciamo:,
		otherwise we would
		[
27	SA1;	si si: ma non vorrei che si verificasse
28		la stessa cosa che si sta verificando sull'
=		
29		=amianto,.
30		c'è un processo in corso,
31		nel quale appunto questi illustri:,
32		responsabili hanno detto,
33		h che siccome negli anni settanta
34		non si sapeva e quindi nessuno ha responsabilità,.
		yes yes but I wouldn't like it to happen what is now happening with asbestos, there is a trial going on in which indeed these illustrious persons in charge said that as in the seventies we didn't know and so nobody bears responsibility,
35		quelli che sono morti sono morti,
36		h(.)
37		per colpa loro,
38		perché non si sa <nessuno è responsabile>
		those who died, died for their own fault, who knows why, because nobody is responsible
39		quindi,

40	sicco:me abbiamo delle esperienze alle
41	spalle,io non ho la::
42	non voglio paragonare l'amianto:,
43	((omissis))
44	però,
45	voglio essere informata,
46	quando succede qualcosa prima,
47	(.)
48	perché,
49	è una sperimentazione
50	e quindi voglio sapere,
51	sono una cittadina,
	thus, I don't want to compare asbestos with this experiment ((omissis)) but I want to be informed when something happens because it is an experiment and thus I want to know, I am a citizen
52	(.)
53	non solo,
54	ma aldilà degli scienziati
55	o dei tecnici che controllano e
56	verificano,io penso che anche i cittadini,
57	quando avviene qualcosa sul loro
58	territorio,abbiano il diritto di verificare,
59	e controllare quello che è stato =
60	=((incomprensibile))
61	nel loro territorio.
	and this is not all. Besides scientists and technicians who control and verify, I think that also citizens, when something happens in their territory, have the right to verify and to control what has been ((incomprehensible)) in their territory.

The representative of biotech companies (PRA) says that "one should not let everything depend on information to citizens". Given the sequential context the above statement seems both a judgment and an exhortation. Immediately afterwards, PRA asks the citizen (SA1) to state that she feels reassured. A question like "don't you feel reassured?" in the context counts as an exhortation with a deontic flavor: "you should feel reassured"; PRA inferentially defines the context as one in which

competent people reassure worried people, and he seems to assume that the previous contribution of the scientist was reassuring. The attempt of the professor to summon a statement of "being reassured" is met by a quick, overlapping, interrupting and smart reply, followed by an interchange in which deep skepticism toward both science and the legislative system (see the antiphrastic "illustrious") is displayed. The interrupted professor in turn interrupts the citizen and once more states his position: people in charge have to take their responsibility. The professor uses a simile; he chooses to compare the situation - field trial setting, relationship between persons in charge and lay persons - to the asymmetrical doctor-patient relationship, in which generally speaking the doctor has the knowledge and the patient is in need of help. At lines 27 to 38 the citizen refers to a trial about compensation for cancer caused by asbestos exposure in dozens of workers in Italian factories. The sentence of that trial was in the news at the time the public encounter took place. The sentence provoked public outrage in Italy because no responsibility was assigned to the corresponding CEOs even though the danger of asbestos had been recognized for a long time (Medicina Democratica, n.d.). At line 42 the speaker closes more tightly her analogy between asbestos and GMOs. In a classic move of denial (the speaker does exactly what she explicitly claims she does not want to do) the citizen associates the consequences of asbestos use with the dire picture of irresponsible authorities and food biotechnologies. Asbestos is mentioned along with the BSA, Thalidomide, the Bhopal disaster and drugs.

7.7.7 "GMOs are like drugs"

1	Presidente;	noi sappiamo che,
2		h gran parte della soia che viene
3		utilizzata per fare i mangimi degli
4		animali proviene dagli Stati Uniti e sono
5		cibi transgenici,
6		e questa è una grande carenza
7		grave lacuna h che non so fino a che punto
8		non sia voluta da ( )
9		da certe pot da certi potentati hh da certi

10	potentati economici,
	we know that the vast majority of soy used for animal feed comes from the United States, and it is transgenic, and this is a serious fault which perhaps is wanted by certain powerful economic actors,
11	no ma sopratutto
12	il fatto è che i cibi transgenici
13	le sostanze transgeniche
14	sono come la droga
	but the worst is that transgenic foods, transgenic substances are like drugs,
15	nel senso che.
16	(.)
17	quando si incominciano ad usare
18	si devono poi usare perche
19	hem un prodotto transgenico hm si può
20	produr:,si può produrre solo,
21	con una semente transgenica
22	che viene he::: prodotta solo da,
23	certe cose
24	è un po' diciamo un circolo vizioso
	in the sense that, when one starts using them then you have to use them, because a transgenic product can be produced only with a transgenic seed, which is produced only by certain things , it is a bit of vicious circle

Here the president of the province makes a point that is frequently heard in discussions over food biotechnologies, namely that certain "powerful economic actors" are playing a dirty game in order to force everyone to adopt their products. Rhetorically the allegation is made in a subtle way, so that the epistemic commitment to the claim is appropriately modulated with respect to the public occasion and the role of the speaker, a local politician. The relative clause at lines 7-10 ("which perhaps is wanted by certain powerful actors") uses the subjunctive and double negation (non so, non sia), that result in a particularly convoluted construction. The

overall effect is to hedge or mitigate (Caffi, 1999) the epistemic commitment of the speaker to what he says. The speaker then enunciates a simile connecting drugs and GMOs. Drug use produces dependency on the drug itself and usually, as a consequence, also dependency on some less then amiable drug pusher. It is often said that drugs put people in a condition of servitude, again a point made frequently when it comes to food GMOs. In turn this syndrome of dependency is linked with the notion that GMOs are being imposed on the Italian market almost surreptitiously. The terms of the analogy characterize negatively not only GMOs but also the overall process, economic and historical, that leads to their diffusion and use. The discourse implicitly criticizes those powerful actors that are pushing GMOs in Italy and around the world.

7.7.8 "A solution to the problem of world hunger"

Here a representative of Italian farmers offers a different view of food biotechnologies:

1	Rappresentan;	gli stati uniti,
2		e qui passi,
3		gli stati uniti
4		possono essere guidati
5		da un interesse economico superiore,
		the United States, fine, the United States can be driven by a larger economic interest,
6		ma anche,
7		il programma di sviluppo dell'onu,
8		le dichiarazioni del e: segretario generale
9		della fao,
10		hh ma e anche di altri paesi testimoniano come,
		however, even the United Nations developing program, the declarations of the general secretary of FAO and of other countries prove that,
11		eh:: e::: caro sindaco,
12		queste cose bisogna anche considerarle,

	hmm dear mayor, one also has to consider these things,
13	per,
14	e::: atr- per queste affermazioni,
15	le biotecnologie,
16	rappresentano un:: a: (.)
17	una soluzione,: (.) al problema,
18	(.) della sottoalimentazione,
19	al problema della fame nel mondo,
20	eh
	according to these statements, biotechnologies are a solution to the problem of underfeeding, to the problem of world hunger,

The vast majority of speakers during the encounter expressed the idea that GMOs are dangerous and suspect. The farmers' representative clearly espouses a different view. He attributes the controversial claim that "GMOs represent a solution to the problem of underfeeding" to international agencies like the United Nations and the FAO. The speaker thus strategically shifts from being author and principal (Goffman, 1992) to the role of "talking machine." That is, he quotes the positions (allegedly) taken by two entities implicitly endorsed as authoritative. There is a polemic aspect to the contribution. The speaker calls the mayor to considering the reported claims when he says "dear mayor one also has to consider these things" implicitly chiding the mayor for apparentlyy having ignored them. The careful management of commitment expressed by the speaker testifies to the difficulty he has in proposing such a view in the current context.

7.7.9 "Our underpants are transgenic"

In the following fragment a citizen takes the floor and argues that GMOs are part of everyday life, even in Italy. His contribution is lively and bold. The speaker argues in favor of a 'realistic' and 'progress-driven' attitude, although not without some concern over

biotechnologies. He offers a representation of food biotechnologies as a technological advancement within a continuum of radical changes faced by Italian agriculture. Economic forces are here depicted in terms radically different from those used by the mayor. Rather than being a blind and violent force which ignores ethical issues, in this speech economy drives progress and frees people from the servitude of intensive labor. The speaker, a distinguished elder gentleman, introduces himself as an agronomist. His science-related identity is clearly relevant. He replies to the mayor, who had stated that people have justified concerns about the potential negative consequences of GMOs. The citizen peppers his speech with long pauses in an emphatic staccato. In the transcript, "Ber" is the citizen (his name has been changed), and "Pub" is the audience.

1	Ber;	posso? hmm sono Berlocchi
2		e sono un agronomo.
3		io credo che: lei abbia toccato
4		un tasto molto,
5		molto giusto molto delicato.
		may I (speak)? I am Berlocchi and I am an agronomist. I think that you have touched a point very, very correct very delicate.
6		(.)
7		è la paura e
8		la paura nasce dall'ignoranza.
		It is fear and fear is born from ignorance.
9		io credo,
10		che bisogna dare una dimensione,
11		(.)
12		a questo fenomeno.
		I believe that one has to give the right dimension to this phenomenon.
13		ci sono milioni di ettari,
14		io non lo so quanti sono (.)
15		io so però che quasi tutto il cotone,
16		è transgenico (.)

		there are millions of hectares, I don't know how many they are, I know though that almost all the cotton is transgenic.
17		io so (.)
18		che la,
19		l'europa non produce soia,
20		ma mangia soia,
21		(.)
22		e frigge le sue cose,
23		(.)
24		nell'olio,
25		(.)
26		di semi vari,
27		compresa la soia,
28		e compreso la colza,
		I know that Europe does not produce soy but eats soy and fries her things in mixed seed oil including soy and rapeseed,
29		io credo che ognuno di noi,
30		abbia masticato
31		chili di roba transgenica,
		I believe that every one of us has munched kilos of transgenic stuff
32		(.)
33		e credo che ognuno di noi abbia
34		le mutande transgeniche,
35		perchè se sono di puro
		and I believe that every one of us has transgenic underpants because if they are pure cotton
		[
36	Pub;	((risate))
		((everybody laughs))
		[
37	Ber;	cotone sicuramente c'è una .
38		percentuale,
39		alta di transgenico,
		surely there is a high percentage of transgenic (materials).
40		( )
41		detta così,
42		(.)
43		sembra detta da un imbecille qualsiasi,

now what I said can appear to be said by an imbecile

44 invece è è la verità,
but it is the truth
45 e noi ci preoccupiamo di cose,
46 di cui ormai,
47 (.)
48 siamo,
49 non invasi,
50 ma noi siamo partecipi di questo
51 fenomeno,siamo partecipi (.)
and we are worrying about things that at this point we are not invaded by, but we are part of this phenomenon, we are part of it
52 quello che bisogna chiarire
53 è la pericolosità,
54 vera o falsa
what has to be clarified is the danger, true or false
55 però milioni di persone,
56 miliardi di persone,
57 perchè c'è la cina e l'india
58 cioè metà del mondo
59 c'è tutta l'america,
60 del nord e del sud
61 compreso il canada
62 che è tutto transgene.
but millions of people, billions of people because there is China and India which means half of the world, there is all America, north and south including Canada which is all transgenic.
63 (.)
64 allora,
65 (.)
66 noi dobbiamo dare,
67 una dimensione,
68 chiara per cacciare la paura
so we need to give the right dimension in order to chase fear away
69 non dobbiamo riempirci di timore
70 dobbiamo dire la verità (.)
we don't have to be full of fear, we have to say the truth

71 e questa è la verità,
72 ma è semplice e l'economia non è un bau bau,
and this is the truth, it is simple, and economy is not the boogie man
73 non è un bau bau l'economia è un fatto,
74 per la quale noi oggi siamo qui,
75 tutti riuniti e,
76 (.)
77 il cinquanta per cento non è a casa,
78 a <u>zappare.</u>
79 (.)
it is not the boogie man, the economy is the fact for which tonight we are all here united. and fifty percent ((of us))are not at home howling.
80 noi abbiamo avuto negli ultimi cinquant'anni,
81 (.)
82 uno sviluppo tale,
83 che dal cinquanta per cento di agricoltori,
84 (.)
85 che faceva l'Italia,
86 siamo arrivati al quattro per cento.
in the last fifty years we have had such a development that from and Italy that was fifty percent farmers, now we have four percent.
87 la metà di noi doveva andare a zappare,
88 o era troppo stanco adesso per
89 partecipare ad una riunione di questo
90 genere informativo di cui io la ringrazio,((al sindaco))
half of us should have gone howling or would have been too tired now to participate in a meeting like this, informative, and I thank you for this ((to the mayor))
91 è una cosa bellissima che lei ha fatto,
it is a wonderful thing you have done.
92 credo però che biogna avere
93 il coraggio della chiarezza (.)
However I think that one has to have the courage of clarity.

One particular feature of this speech is its emphatic invocation of truth. After the contribution of the mayor and of many politicians, who in turn have expressed their perplexities and their concerns and declared emphatically that they had no idea that an experiment with GMOs was taking place, this contribution seems to want to achieve an affect similar to the fairy-tale cry "the emperor has no clothes!". Berlocchi speaks as if he knows the truth and declares it with emphasis. The enphaisi on truth has of course a polemic undertone. It is a reply to the many expressions of suspicion and doubt voiced against GMOs, particularly by the mayor. The target of his rebuttal is largely implicit, but as he ends Berlocchi makes it explicit. Tthe speaker impersonally calls for "the courage of clarity," but he directs his criticism at the mayor. Berlocchi describes the relation between "us" and GMOs in positive, active terms. We are not invaded, he asserts, we are "part of it". Berlocchi uses an Italian ditto "la paura e' figlia dell'ignoranza" - fear is born from ignorance - and he does so from his position as agronomist, that here seems to coincide with someone cognizant of facts and scientific explanations. Berlocchi's interpretation of the forces of economy is particularly poignant. In Italy after the Second World War more then half of the population was employed in agriculture. In the last 60 years everything changed. Berlocchi reminds the assembled public that such radical changes also means that "we" can have a nice evening discussing GMOs rather then staying home exhausted after a hard day handof manual labor in the fields. The point opposes the romantic vision of agriculture which one so often hears in discussions of GMOs. According to Berlocchi's discourse, "we" are not victims of external forces, and the economy is not "the boogie man". Rather, "we" are part of this system, sharing its benefits and risks. Very much like in the interview of the scientist discussed on paragraph 7.6, concern is understood as fear, and fear is assumed to come from ignorance. This extract represents a vision of agriculture and of economy that I call Illuminist. It encompasses trust in science, the future, and the laws governing the world. The citizen seems to believe that with good will and intelligence one can understand and manage complex

phenomena for the common good, overcoming fear and the ignorance which generates it. There is here a view of progress as linear improvement, which contrasts with the dystopian scenarios frequently envisioned in arguments about GMOs.

7.7.10 "We have managed to have antibiotics…"

Some of the people I talked with described prejudices and misrepresentations over GMO as the most recent in a long history of obscurantism and hostility against science. Such an argument is often brought forward by scientists (Miller, 2003). The history of science, from Galileo to Pasteur, is peppered with persecutory receptions of scientific discoveries. The arrogance of authoritarianism at the top of society and the resistance of prejudices at its bottom have many a time come to clash with scientific arguments. Scientists often mention how several prejudices eventually have been overcome by overwhelming evidence provided by science. Here the argument is made very clearly. The following fragment comes from a multi-party conversation between agriculture experts, who are also citizens of the same local village where the rice experiment is taking place. I recorded the conversation almost one year after the public encounter. There are five participants: the village mayor, three citizens and myself. The three citizens are all involved in the farming business, and they have expressed unreserved support for food biotechnologies during the conversation. The first speaker is here concluding a series of remarks about the common opinion among lay people that GMOs are monstrous. He speaks in a joking way, mocking the ignorant persons who think GMOs must necessarily be bigger then their normal counterpart. In the transcript "Int" is the interviewer, "Cit 1", "Cit 2" and "Cit 3" are the interviewees.

1	Cit 3;	guarda che è così!
2		Se tu vai a parlare con uno
3		che trova un pomodoro grosso,
4		dice è fatto con l'OGM!.

		listen this is how it is! If you talk with somebody who finds a big tomato, he tells you that it is done with GMO!
5	Cit 1;	eh ma ormai::
		yes but at this point…
6	Cit 3;	ormai è così!
7		Se vede una cosa più grossa,
8		è perché c'è l'OGM dentro.
9		E' fatto apposta per farlo più grosso.
		at this point that's how it is! If one sees something bigger, it is because there is GMO inside. It is made on purpose to make it bigger.
10		((tutti ridono))
		((everybody laughs))
11		sul serio!
12		Ho visto un giorno in televisione::
13		al mattino la fragola era così
14		((tutti ridono))
15		((parte incomprensibile))
		really! I have seen it on television:: in the morning the strawberry was like this ((he gestures something like a small strawberry size with his hands))
16		e alla sera era COSI',
17		pronta da raccogliere.
		((everybody laughs))
		and in the evening it was like that!
		((gestures something very large opening his arms))
		Ready to pick
18	Int;	o::: che orrore!
		what a horror!
19	Cit 1;	OGM?
		GMO?
20	Cit 3;	No! Siringata!
21		Ma sì come alcuni pomodori da
22		((incomprensibile)) a Bologna,
23		un chilo due etti
		No! Injected! Just like those tomatoes ((incomprehensible))in Bologna, a kilo and two hundred grams
24	Cit 1;	Sì ma quello è letame eh!?
		yes but that is manure really!
25		((omissis))

26	Cit 3;	ormai l'opinione della gente è questa!
27		qualunque cosa ci sia
28		che è più grossa del normale::,
		these days people's opinion is this!
		Anything that is bigger then normal,
29	Cit 1;	comunque insomma:: si:: vabbeh,
30		tutto sommato passano anche sti periodi.
31		Se pensate rispetto alla ricerca
32		cosa è stata la chiesa,
33		cosa è stato il medioevo,
34		siamo arrivati agli antibiotici quindi
35		passeremo anche sto momento insomma.
		yes but in the end, after all, after all these things come to an end. If you think about what the church has done to science, what happened in the middle ages, we have managed to have antibiotics, and so even these phases will pass in the end.

This fragment shows the features of a relaxed multiparty spontaneous communication in which interlocutors chime in adding jokes and further comments to the turns of the previous speakers. Citizen 3 ridicules the ignorance of the many people who believe GMOs are bigger than normal. His point is that the image that links GMOs with monstrosity is hard to eradicate. Even phenomena which have nothing to do with GMO's, namely the "injection" of hormones into fruit to make it grow fast and very big, are nowadays understood as genetic engineering. Citizen 1 at lines 27-28 even jokes that big tomatoes are really obtained with manure, not with GMOs or "injections". At lines 29-35 Citizen 1 voices the view that people's mistaken fear of GMOs is just the last in a long series of prejudices which have beset scientists and hindered the progress of science. The hostility engrained in the belief that GMOs are always bigger than normal vegetables is trivial compared with the obstacle that the Catholic Church has posed to science over the centuries. The mention of antibiotics, perhaps the most consequential achievement of medical science, positions science (and by implication GMOs themselves) in very positive terms. Science is described as both a force for progress and a victim of persecution by ignorance, incarnated in the

Middle Ages, an emblem of obscurantism. The speaker proposes an obvious polarization which represents science as rational and enlightening. Like an insider talking with his peers, the speaker also mocks people's fears of GMOs when he refers to the way bigger fruit, which the average customer prefers, is obtained with "injections". According to the speaker, the vegetables we buy have been tampered with, and not from genetic modification. There are many other things to worry about other than GMOs when it comes to food safety and quality. This argument, here only barely echoed, is constantly mentioned among agriculture experts. Many have told me that food quality and food safety have enemies much bigger than GMOs, ranging from fraud to natural illnesses and the many toxins that grow naturally in foods. Citzen 1 expresses an illuminist view similar to that of Berlocchi. He argues that the enlightening forces of science will eventually overcome ignorance and prejudice.

7.7.11 Conclusion

All the extracts I presented in this session are snapshots of the representations of food biotechnologies that emerge from the ethnography of the rice field trial. I have chosen to illustrate some that represent recurrent positions and their conceptual repertoires which encompass particular sets of key terms: "fear", "democracy", "participation", "reassurance", "economy" and "progress". Each snippet of text can be understood within a certain discursive frame. Opposing representations of science, progress and of the role of the economy in shaping our lives are dictated by wider sets of socially shared representations. These arguably constitute the unspoken frame of reference for the conversations analyzed. Participants voice discourses which stem from wide-reaching perspectives. The illuminist depiction of the unstoppable progress of science fits into one ideological frame. The view of economy as a powerful and positive force that drives social and economical growth is perhaps another tenet of the same ideological frame. The description of capitalism (again called "economy") as brute force which ignores ethical concerns fits into a view which contradicts

the previous one. Other perspectives are derivative from these wider ones. The notion that lay persons are gullible and that therefore decisions should be made by experts collides with the claim of democratic participation for everybody. And so on. Each argument may be reduced to a set of prototypical repertoires that fit into the logic of one far reaching take on reality. However, each interchange in the data is intrinsically indexical. By indexical I mean that each conversation responds to the immediate needs of the specific situation and that it receives its meaning partially by virtue of the context in which the interchange takes place. Speakers offer their opinions in a characteristically complex and intertextual way, quoting other's discourses to make their points, supporting or challenging claims heard there and elsewhere, making use of the commonly available images and words but also building up new ones - think of the image of GMOs compared to drugs, or of transgenic underpants - that incorporate the features and attributes into food biotechnologies in a lively way. In other words, participants display their views creatively and strategically. They try to persuade others, to defend themselves, and to test their own positions in the natural setting where representations are formed and exchanged.

8 CONCLUDING CONSIDERATIONS

In this final chapter I reflect more broadly on the representations of GMOs in Italy. My conclusions follow from the data I have discussed in detail in previous chapters, supplemented by statements of key figures in the Italian agricultural economy. In this chapter I will return to the theoretical thrust of the thesis, about the basic philosophical principles of SRT and DP and the notion and analysis of representations.

8.1 The three focal aspects of the GMO debate in Italy

When social scientists began to study the reception of biotechnologies, the topic was really new to the public. The answers that subjects would give to survey and interviews were necessarily superficial, standardized and dependent on a limited number of images available from the mass media and in limited public discourse. My data show that at this moment in time some lay people have their own well developed theories of GMOs and that those theories have come to be part of their wider organized ideological frame, encompassing matters of power relations, justice, culture and identity. The debates surrounding GM foods in Italy revolve around three interconnected focal points. The first is a concern that GMOs may have negative consequences for health and for the environment. Under this core topic are subsumed discussions over risk assessment: the specter of “unforeseeable risks”, is a corollary of the argument that under the present state of knowledge scientists cannot assess the true risks of biotechnologies. Virtually every discourse about food biotechnology touches upon the matter of potential dangers both for the environment (loss of biodiversity, worldwide plant illness, invasion of pest species of plants and animals) and for human health (allergies,

poisoning, genetic illnesses, generalized loss of immune defenses, cancer). The second core point, very prominent in the data I have collected, has to do with justice and the rights of civil society in the context of the development and use of GMOs. This can be called the "citizenship" facet of the debate. Discourses focus on the logic that should govern how technology-related decisions with large scale impact on society are made. In general terms, experts argue for elitist forms of decision-making. Interchanges between experts and lay persons show how participants adopt different rationales for deciding whether or not an experiment should be carried out. The adversarial interactions between the representative of the Italian Association of biotech companies and local citizens during one public debate are exemplary (see sections 6.1 and 7.7.6). While local citizens argue that they should be involved and consulted, the expert argues that "those responsible" should be left to do their job without having to consult lay people. The scientist interviewed in section 7.6.1 expressed the same view: let the designated responsible agents decide. In the Italian data, many discussions focus on how decisions are made about whether to develop and use GMOs, and who benefits from food biotechnologies. Such discourse partially overlaps with the expression of "social values" (Gaskell & Others, 2005:1908) which correlate with lay people's assessment of the appropriate way to govern science. In my data, respondents implicitly propose competing "principles of governance" which assign more or less importance to scientific competence and institutional decision-making on the one hand, and to assessments by lay people on the other. As it happens, furthermore, in everyday discussions how to govern is seldom dissociated from what is to be governed. Because GM foods are a particularly controversial topic, the decision-making process that might bring them to our tables becomes itself contentious. In the data I present, advocated forms of governance are transparently associated with position-taking toward GMOs. Broadly speaking, those in favor of GMOS are inclined to delegate decisions to the experts; those against express concern with the decision-making criteria and largely argue for lay people to be involved Overall, the focus is on who is, and who should

be, making the decisions. The impression among critics is that global-scale financial systems, rather than democratic principles (or even scientific ones), rule. In the words of some participants, GMOs epitomize the negative aspects of globalization: cultural standardization, destruction of local ways of life and of traditional forms of agriculture, and, above all, submission to the forces of western capitalistic imperialism, prototypically embodied by the Unites States. GMOs are in that context associated with the worst effects of capitalism, which the mayor of the town where the field trial was going on describes as a brutal force blind to ethical concerns (see sections 7.7.2 and 7.7.3). According to some, the diffusion of GMOs violates the rights of peoples and countries. "Food sovereignty" is a concept used to claim that a country has a right to choose what to grow and how to provide food for its citizens, according to its own best interests and traditions (Food sovereignty and trade, n.d.). A perceived right to food sovereignty connects to the third and last key facet of the debate: many express the view that GMOs are incompatible with and in fact threaten Italian food culture. The notion of food sovereignty is linked with fear of cultural impoverishment and loss of tradition, in Italy and elsewhere. Ultimately, GMOs are rejected as in conflict with Italian 'identity', an identity which evidently includes great attachment to "genuine" and "traditional" foods. Italy markets its products worldwide as high quality foods. Losing a universally recognized claim to producing and eating good, "traditional" food threatens both the Italian economy and Italian identity. Fear of economic loss in the agricultural sector is not the main concern of lay people. Many protagonists in the discourses I have documented express the view that GMOs are a threat to the Italian way of farming and eating. They propose metaphors of invasion of the country by foreign seeds and foods (Quaglia, 2002). A participant paired GMOs with drugs (section 7.7.7). The comparison encompasses both the idea that GMOs would make Italians dependent on others and the undesirable quality of the products. The Bubbio declaration (section 7.1) neatly sums up the main tenets of this particular perspective on food biotechnologies, namely that they are alien to Italian food culture, which they will inevitably impoverish.

GMOs are thus dangerous, undemocratic and problematic for how Italians conceive of their way of farming and eating. Participants sometimes seem to refuse GMOs on matters of principle. Transgenesis is represented as an unwarrantable tampering with nature. Such arguments of principle are frequently joined to arguments about the inutility of food biotechnologies. Eurobarometer surveys have shown that people are willing to accept "tampering with nature" in proportion to the perceived utility of the scientific practice in question. Growing organs in transgenic animals in order to use them for transplants is more acceptable to respondents than growing transgenic plants for food (Eurobarometer, 2000; 2002). In my data, objections based on "nature" (vs. "unnaturalness") are not the most salient. Perhaps the closest to such objection is the opposition expressed by the archbishop of Genoa, who argues that GM wheat would not be fit for the Eucharist (Boero, 2004). However, as the analysis of the article shows, the argument of principle is immediately followed by others more political (see section 7.2.4).

8.1.1 Key actors and the Italian battle against GMOs

As I have just described, there is one aspect of the debate around food biotechnologies in Italy which seems associated with a blanket rejection of any profit driven technological product coming from the west. Someone has found a catchy definition for this kind of refusal. Among scientists circulates the "watermelon theory" of rejection of biotechnologies. The theory goes that committed anti–biotech campaigners are "green outside and red inside" (Chrispeels, personal communication). The "theory" is well grounded in the historical link between green and left political stances (Dobson, 2000), and it might explain many of the arguments against biotechnologies I heard over the years in Italy. However, refusal in Italy runs across the whole parliamentary spectrum. The "theory" fails to explain the agreement between political right and left on the opportunity to keep food

biotechnologies out. A better explanation of refusal must look at the cultural and economic forces at play. While I focus on Italy, the books of Indian Vandana Shiva (2000) and the writings and actions of French farmer activist Jose Bové (Bové, 2001) show that cultural and economic issues generally have an important part in the debate over plant biotechnologies. Both aspects neatly surface in a passage of a television debate where the Italian agriculture minister, a former agriculture minister, scientists and farmer representatives are debating GMOs. The program, entitled "Videocamere", was transmitted on December, 2nd, 2003 over the second channel of Italian national television (RAI DUE)[12]. The interaction during the program is characterized by mutualexpressions of strong disagreement between politicians and scientists. In a key passage, while the scientist Giorgio Poli is trying to make the point that inserting an alien gene in an organism cannot be considered to be like mating two organisms of different species, Alfonso Pecoraro Scanio, who was minister of agriculture in the previous Italian government, interrupts to say that "the logic of GMOs is opposed to the logic of typical foods". In a classic Conversation Analysis style we can ask of his utterance: "why that now?" Pecoraro Scanio's contribution follows in sequence that of Giorgio Poli; thus we must assume that it is related to it.However, he does not reply to the issue of how one should think of the insertion of one alien gene in an organism. Pecoraro Scanio instead shifts the topic onto what he appears to consider a more relevant problem within the GMO debate, and he does so interrupting Poli half way through his attempt to provide a reassuring account of the insertion of the gene of one organism into another organism of a different species. The *real* problem , as it is described by Pecoraro Scanio and Massimo Pacetti in the interchange, is not so much the danger or uncanny nature of GMOs. Rather it is that their *logic* is opposed to what Italian farmers and agricultural policy makers are trying to do, namely develop, safeguard and promote a certain kind of agriculture, which relies on the image of typical foods, high quality and traditional farming practices. This effort, which has relevant economic components, in the words of participants,

[12] *I am grateful to Andrea Zonta for the tape and the transcription.*

needs to fight external pressures from the worldwide economic giants. Later in the program, natural opponents Alfonso Pecoraro Scanio, (representative of the green party), and Gianni Alemanno, (from the right wing party Alleanza Nazionale, at the time Minister of Agriculture), mutually agree that GMOs are bad for Italian agriculture, thus offering a rare bipartisan duet.Other key actors put great emphasis on the role Italy has for winning what is defined, with great rhetorical awareness, as a "battle of cultures". Simone Vieri is the president of the National Institute of Economic Agriculture (INEA). He is the person officially responsible to represent the economic interests of Italian agriculture. Speaking at the "Science and Society" conference, organized by the Consiglio dei Diritti Genetici on October 2004, he articulates the explanation in clear terms, rooted in the economical reality of EU agricultural policies that have been subsidizing the Italian and European economies (Della Vedova, 2002). In his speech he said:

> Our development model is based on the strong ties between agriculture and the environment, it is based on traditions, on traditions that are not only food traditions, but that are cultural traditions. There is a strong link that keeps the country linked to its agriculture"
>
> (omissis)
>
> here then there is a battle which is much larger than the one hundred billions of seeds or seventy-five hectares to be cultivated in Italy[13]. There is a cultural battle, a historical battle, because I am convinced that if the multinationals enter in Italy, and they are pressing like hell to enter in Italy , they don't really care about, I don't know, those one hundred billion.. They are interested in the symbolic value of a victory, over that productive model which is most of all a cultural and a territorial model. It is, the moment the Italian dyke breaks down, and the moment in which then they enter in Europe, because in the end we are

[13] *Vieri had in the course of his speech made a calculation of what the Italian market is worth for multinational seed producers, and comes to the conclusion that the pressure for "entering Italy and Europe" cannot be explained simply in the terms of gaining access to a market.*

> the dyke in this battle because who is negotiating coexistence, coexistence is been negotiated in Italy.
>
> (omissis).
>
> The battle over GMOs is being fought in Italy because it is there that they want to enter, because by proving that one can enter in Italy and that one can make GMOs in the Italian agricultural productive system, one puts in crisis a model of agricultural development which is first of all a model of cultural development (omissis).
>
> *(Vieri, 2004)*

Once more, the discourse is framed in the terms of a battle between *us* and *them*. Vieri closes his goosebump-producing speech warning that the global control of food supplies might mean that famine could strike again, just as it did sixty years ago, when his own father, he says, suffered hunger. This discourse incorporates very important points of the debate around food, and it does so from the perspective of the insider, the Agriculture expert. The themes that surface again and again in the data are related to Italy's cultural patrimony of quality foods, which is considered an economic resource to defend and a marker of identity to preserve.

8.2 Theoretical conclusions: SRT, DP and modes of representing food biotechnologies in Italy.

To conclude, I return to the theoretical question with which I began, and the sort of answer I propose. The scholars I refer to in this work operate either from what could be called a realist position - Moscovici (1988a), van Dijk (1998) - or an anti-realist one - Wetherell & Potter, (1992), Edwards, Ashmore, & Potter (1995), However, there is agreement among them that socially interpreted reality is the only reality we have access to. There is also agreement that social reality is

constituted, reproduced and modified in the course of social life. Further, all the above scholars have made clear that they consider discourse - understood as language in use - to play an essential part in the construction and modification of social reality. These are my starting points. Accordingly, as I made clear in the introduction, I set out to explore what GMOs *are* - as part of a socially constituted reality - according to different discourses in Italy. Social Representations Theory provides a framework for describing how it happens that, given the emergence of a new phenomenon in the public sphere, different groups understand it according to their socially shared representations. In SRT, the question would be: how do different groups anchor the new item to their already formed wealth of organized knowledge? Different representations would fit in group-dependent cognitive structures and would fulfill the function of explaining a new phenomenon in the reassuring terms of what is already accepted within the social group. For instance, subjects whose frame of mind is anti corporate and anti capitalist understand GMOs as the last in a series of useless and dangerous undertakings on the part of multi national profit-driven companies. On the other hand, technology-buffs or those who sympathize with entrepreneurial endeavors would perhaps welcome food biotechnologies. While there is a very large corpus of studies which focus on public opinion and biotechnologies, including studies which use Social Representations Theory, what has not been fully described yet is if and how different discourses related to food biotechnologies take a logical place according to *principle-generating standpoints* relevant to matters of power and justice. This is where I have aimed my contribution.Given the importance that communication has in the constitution and diffusion of social reality, I decided that the detailed analysis of discourse was a promising route to pursue such an endeavor. A challenging aspect of my work has been my attempt to combine Social Representations theory and Discursive Psychology in the study of Italian modes of representing food biotechnologies. Following Discursive Psychology, I have reformulated the question of how people understand GM foods in the terms of how they use representations of GM foods.

Rather than focusing on cognition and enquiring how people make sense of food biotechnologies, I consider the discursive embodiment of a representation as the "thing" which can be studied, pushed around, pulled apart by the analysis, and ask what people *do* with such a discourse. Within the discourse analysis tradition it has been pointed out that discourses not only depict a certain world, but also provide arguments for how things should be (Wetherell & Potter, 1992; van Dijk, 1998). Discourses are performative as much as descriptive; they change things and 'push in one direction' (or another).

One last example may make my argument clear. Over the last six years I have spoken with several scientists doing research on food biotechnologies. Many of them describe the insertion of genes in a plant in the terms of traditional breeding practices, something humankind has engaged in for the last 10.000 years (Hubbell, 2001). Researchers told me several times: "we are just doing what we have always done, only better: with more precision and faster results. " This type of discourse is very common among biotech specialists (Hubbell, 2001; Charles, 2001) and it constitutes one particular interpretative repertoire (Potter & Wetherell, 1987) often used by scientists. We can call it "Transgenesis as breeding". Talking of transgenesis as 'traditional breeding' clearly cannot represent the full picture of how scientists strictly speaking understand GMOs. Talking with them one realizes that they do not even think of genes as things - as a lay person might do - but rather as sequences of bases, as information. However, geneticists might talk of genes as if they were things when it seems appropriate for the context. Anchoring GMOs in traditional breeding techniques is just one of the ways of talking and thinking available to the speaker. There is a further aspect to this metaphor. The choice one makes to use a specific expression has rhetorical consequences. Linking GMOs to old time farming practices has also a strategic aspect. Talking of GMOs as yet another form of breeding new plants is, as Billig would put it (Billig, 1987b; 1991a), not so much the expression of an opinion in a vacuum but a partisan volley in a field of controversy. The comparison between GMOs and traditional breeding has an obvious normalizing effect. It projects a flavor of

continuity, even of tradition, on a practice that others vociferously describe as unnatural, disruptive and terribly dangerous. It claims “we have always done this”. When faced with a social researcher who is asking questions about food biotechnologies, scientists tend to give this type of representation of GMOs, and implicitly also of themselves. I do not claim that scientists lie when they express themselves in these terms. On the contrary, I claim that there is more to say about what words, expression, and arguments one uses to talk and think about a certain phenomenon than linking it to previous knowledge. There is a project implicitly called upon, a plan in which a given representation might fit. Such a plan is social (in the sense that a scientist is a member of a certain community) as much as individual (it is about that scientist who is presenting herself or himself as a certain kind of person in that particular interaction with me). Lastly, the development of such a plan acquires its force and particular thrust in every instance of its occurrence depending on the immediate (discursive) context. My interest is less in similarities between representations than in differences. It might be that all Italians share the same representations of food biotechnologies at some very basic level (Mc Combs, 1994); on the whole they all watch the same television channels, they all are immersed in the same discourses. Persons less involved or interested in the issue all might come up with similar sets of images if asked what comes to their mind when they think of food biotechnologies. However, what I find more interesting is the different function these images fulfill for the worldviews of individuals; we can discover this by attending to what individuals do with these arguments during a given discussion. I have sought to show how these discourses display ideological components in their complex textures. How participants use arguments for and against food biotechnologies is similar to what players do in a game of cards. Players have in their hands a certain set of cards; each move puts a card on the table. There are a finite number of cards which are played against each other. Similarly, in a discussion there is usually a limited set of things that one can say before a topic like food GMOs is exhausted. What can reveal the thread of thoughts in participants is both the development of a single argument

and how different participants chime in the discussion contributing new elements or underlining certain aspects of the discussion as opposed to others. The allegory of a card game fosters the impression that a relevant aspect in any debate is strategic. While "what participants think" is the essential presupposed element of any interaction, it remains indeed presupposed. The only thing we have is the interaction. The modalities and specific unfolding of the discussion display the richness and complexity of how ideas, beliefs, are found in the real world, not in the minds. I do not presume to have exhausted all the representations of food biotechnologies one can find in Italian society. However, I hope I have managed to show the threads that recur in representations of food biotechnologies, some of which may specifically characterize the Italian context.

8.3 Conclusion

The intended contributions of my work can be summed up as follows. Firstly, I have offered a description of the various discourses over food biotechnologies in Italy that, I hope, does justice to the richness, creativity and articulation of the arguments proposed by participants. While the transcription process inevitably implies a great loss of the freshness and complexity of interactional nuance (Ochs, 1979), I am convinced that my presentation has preserved for the reader at least some of the strategic perspicacity of many participants. Rather than flattening participants' discourses in order to fit them into a closed set of categories, I have preferred to let the interactions stand on their own as much as possible.Secondly, I argue for the use of naturally occurring data in social psychology research. In the midst of real day to day interaction the complex ways representations are constructed and delivered, exchanged and built, are made available in all their complexity. The data I offer show the multi layered way participants express their representations. Socially shared cognition insists that rather than being monads holding thoughts, persons have their thoughts shaped

and developed in the social situation. As I have extensively argued while discussing theoretical matters, few social psychological studies take stock of this fact. Most instead rely on standardized questionnaires which obscure the role of naturally occurring interaction in the exchange of representations. I intend my thesis as a push towards shifting social psychological studies towards naturally occurring verbal data. Thirdly and last: perhaps the most theoretically challenging aspect of this work is the discussion of the basic tenets of SRT and DP. I discussed how the two disciplines rely on two different concepts of the communicative process which are rooted in linguistic philosophy. Ultimately, the question between the two approaches seems to have roots in different notions of "meaning". My aim has been to move beyond the apparent clash between 'cognition' and 'action'. While researchers in DP have emphasized the irresolvable differences between what they hold to be a mentalist approach and their own, I have tried to point to the essential link between cognition and action and the necessity to reflect on the mental aspect of representations. Metaphors and images that anchor biotechnologies to well known phenomena are *both* a way of thinking and acting. While one approach might focus on one of the two aspects and downplay the other, there is a need to keep alive both notions. I am sure I have not fully reconciled the contradictions between the SRT perspective on representations - the notion that they are structured sets of beliefs - and the DP notion - that they are strategically motivated individual actions. However, I hope that in the course of the thesis I have exposed a number of new questions relevant to both approaches.

9 REFERENCES

Approvato il decreto sugli OGM. Per Alemanno applausi da sinistra. [The decree on GMOs has been approved. For Alemanno cheers from the left] (November, 11, 2004) *La Repubblica.*

Aarhus Convention on access to information, public participation and access to justice in environmental Fmatters. (1998, June 25). Retrieved on June 7, 2001, from http://www.unece.org/env/pp/documents/cep43e.pdf

Abels, G. (2002). Experts, Citizens and Eurocrats. Towards a policy shift in the governance of Biopolitics. *The EU. European Integration online papers* (EIoP), 6 (19). Retrieved February 1, 2003 from http://eiop.or.at/eiop/teste/2002-019ahtm

Albanese, G. (2003, August 19). La questione degli OGM. Le biotecnologie possono davvero essere la soluzione al problema della fame nel mondo? [The GMOs issue. Can biotechnologies really be the solution to the problem of word hunger?] *Grazia,* p. 72.

Alimenti OGM non nel mio carrello! [GM foods, not in my cart!] (n.d.). [Greenpeace leaflet]. Retrieved on March 25, 2005, from http://www.greenpeace.it/ogm/materialivari/volantino.pdf

Allansdottir, A. Bagnara, S., Angotti, A., & Montali, L. (2001). Italy: from moral hazards to a cautious take on risks. In G. Gaskell, & M. Bauer (Eds.), *The years of controversy: Biotechnology 1996-2000.* London: Science Museum.

Allansdottir, A., Pammolli, F., & Bagnara, S. (1998). Italy. In J. Durant, M. W. Bauer, & G. Gaskell (Eds.), *Biotechnology in the public sphere. A European sourcebook* (pp. 89-102). London: Science Museum.

Atkinson, J. M., & Heritage, J. (Eds.). (1984). *Structures of social action: studies in conversation analysis.* Cambridge: Cambridge University Press.

Augoustinos, M. & Walker, 1. (1995). *Social Cognition.* London: SAGE

Austin, J. L. (1975). *How to do things with words* (Rev. ed.). Oxford: Oxford University Press. (Original work published 1962).

Baget Bozzo, G. (2003, August, 18th). OGM Benedetti. La chiesa e gli organismi geneticamente modificati [Blessed GMOs. The Church and genetically modified organisms]. *Panorama*, p. 63.

Bäckström, A., Pirttilä-Backman, A. -M., & Tuorila, H. (2003). Dimensions of novelty: a social representation approach to new foods. *Appetite*, 40, 299-307.

Bartlett, F. C. (1995). *Remembering: A study in experimental and social psychology.* Cambridge: University Press. (Original work published 1932).

Bauer, M. Gaskell, G. & Durant, J. (1994). Biotechnology and the European Public. An International study of Policy , media Coverage and Public Perceptions, 1980 -1996. Unpublished manuscript, June, Hydra, Greece.

Bauer, M. W., & Gaskell, G. (1999). Towards a paradigm for research on social representations. *Journal for the Theory of Social Behaviour*, *29*, 163-186.

Bauer, M.W., & Gaskell, G. (2002b). The Biotechnology movement. In M. W. Bauer, & G. Gaskell (Eds.), *Biotechnology: The making of a global controversy*. Cambridge: Cambridge University Press.

Bauer, M.W., & Gaskell, G. (Eds.). (2002a). *Biotechnology: The making of a global controversy*. Cambridge: Cambridge University Press.

Bauer, W. M., & Bonfardelli, H. (2002). Controversy, media coverage and public knowledge. In M. W. Bauer, & G. Gaskell (Eds.), *Biotechnology: The making of a global controversy*. Cambridge: Cambridge University Press.

Berger P. L., & Luckmann, T. (1966). *The Social Construction of Reality. A treatise in the Sociology of Knowledge.* London: Penguin Books.

Berlan, J. P. (2004). *Clones, Chimeras, Patents. How the drive of agricultural biotech was made invisible*. Retrieved May 2, 2005, from http://www.consigliodirittigenetici.org/new/sciesoc/abstract/EN-Berlan.doc

Billig, M. (1988). Social representations, anchoring and objectification: A rhetorical analysis. *Social Behaviour, 3,*1-16.

Billig, M. (1987). *Arguing and thinking: A rhetorical approach to social psychology.* Cambridge: Cambridge University Press.

Billig, M. (1997). Discursive, rhetorical and ideological messages. In C. McGarty, & A. Haslam (Eds.), *The message of social Psychology.* Oxford: Blackwell.

Billig, M. (1991a). *Ideology and opinions: Studies in rhetorical psychology.* London: Sage.

Billig, M. (1991b). *Ideology, rhetoric and opinions.* London: Sage.

Billig, M. (1993). Studying the thinking society: social representations, rhetoric and attitudes. In G. M. Breakwell, & D. V. Canter (Eds.), *Empirical approaches to social representations.* Oxford: Oxford University Press.

Billig, M., Condor, S., Edwards, D., Gane, M, Middleton, D., & Radley, A. (1988). *Ideological dilemmas. A social psychology of everyday thinking*. London: Sage.

Boero, M. (2004, February 4). Il vescovo di Genova: la farina OGM sconsacra l'ostia [Genova's bishop: GM flower desecrates the Eucharist]. *La Stampa*, p.13.

Bonazzi, M. C. (2005, April 26). Gli scienziati: «Assurdo evocare problemi etici e parlare di cibi-Frankenstein» Gli oppositori: «Finora non sono stati valutati tutti i rischi per la salute umana e per la contaminazione delle altre piante». *La stampa* [Electronic version]. Retrieved June 15, 2005, from http://www.lastampa.it/search/AlbiCerca/risultato.asp#

Bora, A., & Hausendorf, H. (eds.)(2004). PARADYS Final report to the Commission. [Unpublished report].

Bora, A., Furchner, I., Hausendorf H., & Munte P. (2001). *State of the art report: Currents of thought on the main issues of the PARADYS project.* Unpublished report, Bielefeld University, Germany.

Bourdieu, P. (1977), *Outline of a theory of Practice*, Cambridge: Cambridge University Press.

Bourdieu, P. & Eagleton, T. (1994). Doxa and common life: an interview. In: S. Žižek (Ed.), *Mapping ideology*. London: Verso. (265-277).

Bove', J. (2001). *The world is not for sale.* Verso.

Briggs, C. L. (1986). *Learning how to ask.* Cambridge: Cambridge University Press.

Brown, R. & Gilman, A. The pronouns of power and solidarity. In Sebeok, T.E. *Style in Language.* New York: MIT, 1960. 253-76.

Bucchi, M., & Neresini, F. (2004). Why are people hostile to biotechnologies? *Science Supporting Online material,* Doi: 10.1126/science. Retrieved March 24, 2005, from http://www.sciencemag.org/cgi/data/304/5678/1749/DC1/1

Bucchi, M; Neresini, F. & Pellegrini, G. (2003). Biotecnologie: democrazia e governo dell'innovazione. Terzo rapporto su biotecnologie e opinione pubblica in Italia [Biotechnologies: democracy and the governance of innovation. Third report on biotechnologies and public opinion in Italy]. (2003, December). Milan: Fondazione Giannino Bassetti & Observa. Retrieved March 12, 2005, from http://www.observanet.it/observa/pubblicazioni.asp?LAN=ITA

Bucchi, M; Neresini, F. & Pellegrini, G.(2002).Biotecnologie tra innovazione e responsabilità [Biotechnologies between innovation and responsibility]. (2002, February). *Biotecnologie e opinione pubblica in Italia.* Milan: Fondazione Giannino Bassetti & Poster.

Bucchi, M; Neresini, F.(2000). Primo rapporto su biotecnologie e opinione pubblica in Italia.

Burr, V. (2003). *Social Constructionism* (Second edition). London: Psychology Press.

Campania, *Law N. 15,* (2001, November 24).

Caffi, C. (1999). On mitigation. *Journal of pragmatics*, 31, p.881-909.

Carson, R. (1994). *Silent Spring.* Mariner Books. (Original work published 1962).

Cartagena protocol on biosafety. (2000, January 29). Retrieved October 15, 2003, from http://www.biodiv.org/biosafety/protocol.asp

Charles, D. (2001). Lords of the harvest. Cambridge, MA: Perseus Publishers.

Cicourel A.V. (1964). *Method and measurement in sociology*. Glencoe, IL

Clark, H. H. (1996). *Using language*. Cambridge: Cambridge University Press.

Collavin E. & Pellegrini, G. (2004). Italy. In Bora, A. & Hausendorf, H., *PARADYS Final report to the Commission*. [Unpublished report].

Colombo. L. (2004) *Chi è contro gli OGM viene messoa tacere*. Interview. Retrieved May, 19, 2005, from http://www.comitatomst.it/bra1004b.htm.

Community Register of GM food and feed. (n.d.). Retrieved October 2, 2005 from http://europa.eu.int/comm/food/dyna/gm_register/index_en.cfm

Comune Antitransgenico. Comuni liberi da produzioni transgeniche [Antitransgenic council. Councils free from transgenic productions]. (n.d.). Retrieved May 8, 2005, from http://www.rfb.it/comuni.liberi.ogm/comuni_aderenti/adesioni.htm

Comune antitransgenico. Delibera comunale Comune di Bubbio, provincia di Asti [Antitransgenic Council. Council deliberation, Bubbio, in the province of Asti]. (1999, August 13). Retrieved July, 4, 2002, from http://www.sherwood.it/osservatorio/ogm_free/bubbio.rtf

Davies, B., Harré, Rom (1990), Positioning: The discursive production of selves. In: Journal for the theory of social behavior 20: 43-63.

De Petris, (2004). *Governo ricorra a Consiglio di Stato.* [The government must appeal to the National Counsel]. Public declaration. Retrieved on September, 25, 2005, from http://www.ecquologia.it/sito/pag797.map?action=single&field.joined.id=39778&field.joined.singleid=39910

Decreto del Presidente del Consiglio dei Ministri, (2000). Sospensione cautelativa della commercializzazione e dell'utilizzazione di taluni prodotti transgenici sul territorio nazionale, a norma dell'art. 12 del regolamento (CE) n. 258/97) [Decree of the prime minister, cautional suspention of authorization to trading and using some transgenic products on national territory] (2000, August 4).

Decreto Legislativo della Repubblica Italiana, n. 224, (2003).[Italy Legislative decree n.224].

Decreto Legislativo della Repubblica Italiana, n.279 (2004). [Italy Legislative Decree n. 279, 22 November 2004 published on the Gazzetta Ufficiale n. 280 of 29 November 2004].

Deliberate Releases and Placing on the EU market of Genetically Modified Organisms (GMOs). (n.d.) Joint Research Centre, Directorate General, European Commission. Retrieved May 2, 2004, from http://gmoinfo.jrc.it/gmc_browse_1829.asp

Della Vedova, B. (2002, July 30). PAC, una riforma per lasciare tutto come è [CAP, a reform to leave things as they are]. *Il Sole 24 Ore* [Electronic version]. Retrieved October 3, 2003, from http://coranet.radicalparty.org/pressreview/print_right.php?func=detail&par=2791

Directive 2001/18/EC of the European parliament and of the Council on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC, (2001, March).

Dobson, A. (2000). *Green political thought*. London: Routlege.

Doise, W. (1992). L´ancrage dans les études sur les representations socials [Anchoring in the study of social representations]. *Bullettin de Psychologie*, *45*, 189-195.

Doise, W. (1986). Les représentations sociales : définition d'un concept. In W. Doise & A. Palmonari (Eds.), *L'étude des représentations sociales*. Neuchâtel : Ed. Delachaux & Niestlé. [Social Representations : definition of a concept].

Dreezens E., Martijn C., Tenbült P., Kok G., de Vries N. K. (2005). Food and values: an examination of values underlying attitudes toward genetically modified-and organically grown food products. *Appetite* 44, 115–122.

Durant, J., Bauer, M. W., & Gaskell, G. (Eds.). (1998). *Biotechnology in the public sphere. A European sourcebook.* London: Science Museum.

Duranti, A. & Goodwin, C. (Eds.). (1992). *Rethinking context: Language as interactive phenomenon.* Cambridge: Cambridge University Press.

Durkheim, E. (1972) *Selected writings.* Cambridge: Cambridge University Press.

Eagleton, T. (1991) *Ideology: an Introduction,* London, Verso.

Edwards D. (2005). Discursive Psychology, in K.L. Fitch & R.E. Sanders (Eds.), *Handbook of Language and Social Interaction* (pp.257-273). Erlbaum.

Edwards, D., & Potter, J. (1992). *Discursive psychology*. London: Sage.

Edwards, D., Ashmore, M. & Potter, J. (1995). Death and furniture: the rhetoric, politics ad theology of bottom line arguments against relativism. *History of the human sciences*, 8, p. 25-49

Edwards, J. (2002). Taking public understanding seriously. *New genetics and society*, *21*,315-325.

Epstein, S. (1990). Cognitive-experiential self-theory. In L. A. Pervin (Ed.), *Handbook of personality* (pp.165–192). New York: Guilford.

EU Court overturns Austrian law to ban GM. (2005, October 5). Retrieved October 6, 2005, from http://www.europabio.org/

Eurobarometer (2000) Eurobarometer 52.1: The Europeans and Biotechnology, Report by INRA (Europea) – ECOSA on behalf of Directorate-General for Research, Directorate B – Quality of Life and Management of Living Resources Programme, 15 March 2000. Brussels.

Eurobarometer (2002). Eurobarometer 58.0. Retrieved on May 2004 from http://europa.eu.int/comm/public_opinion/archives/ebs/ebs_180_en.pdf

Eurobarometer (2006). Eurobarometer 64.3.

European Commission. Biotechnology and GMOs Information web site. http://gmoinfo.jrc.it/

European Community. (n.d.). *Food and feed Safety*. Retrieved October 2, 2005, from http://europa.eu.int/comm/food/food/biotechnology/authorisation/index_en.htm

Fazzo, L. (2002, October 24). E l'universita' nascose a tutti il suo riso OGM. *La Repubblica.*

Fele, G. (1991). *L'insorgere del conflitto.* Milano: Franco Angeli.

Ferretti, M. P., & Magudda, P. (2004, August 28). Italy: between local traditions and global aspirations. *Consumer trust in food – A European Study of the Social and Institutional Conditions for the production of trust*. Retrieved February 13, 2005, from http://www.trustinfood.org/SEARCH/BASIS/tif0/all/wp/DDD/49.pdf

Food sovereignity and trade (n.d.). *La via campesina.* Retrieved July, 4, 2003, from http://www.viacampesina.org/en/index.php?option=com_content&task=blogcategory&id=118&Itemid=123

Fraser, C. (1994). Attitudes, social representations and widespread beliefs. *Papers on Social Representations, 3*. Retrieved March, 2002, from http://www.psr.jku.at/psrindex.htm

Garrou, E., Pisani, E., & Malagoli, C. (2001). *OGM: conoscerli per affrontarli*. Roma: VAS.

Gaskell, G., Allum, N., & Stares, S. (2003). *Eurobarometer 58.0*. Retrieved May, 2004, from http://europa.eu.int/comm/public_opinion/archives/eb/ebs_177_en.pdf

Gaskell, G., Allum, N., Bauer, M., Durant, J., Allansdottir, A., Bonfadelli, H., et al. (2000). Biotechnology and the European Public. *Nature Biotechnology, 18*, 935-938.

Gaskell, G., Allum, N., Bauer, M., Wagner, W., & Kronberger, N. (2001). Public Perceptions of Biotechnology in Europe: Eurobarometer 52.1. In M. Bauer, G. Gaskell, & J. Durant (Eds.), *The years of controversy: Biotechnology 1996-1999*. London: Museum of Science and Industry.

Gaskell, G., Thompson, P., & Allum, N. (2002). Worlds apart? Public opinion in Europe and the USA. In M, W. Bauer, & G. Gaskell (Eds.), *Biotechnology: The Making of a Global Controversy*. Cambridge University Press.

Gaskell, G., Wagner, W., Torgersen, H. et al. (1997). Europe ambivalent on biotechnology. *Nature, 387*, 845-847.

Gaskell, G. Einsiedel, E., Hallman, W. Hornig –Priest, S., Jackson, J. & Olsthoorn, J. (2005). Social Values and the Governance of Science. *Science*, Vol. 310:1908-1909.

Gergen, (1982). *Toward transformation in social knowledge*. New York: Springer-Verlag.

Giannini, M. (2003, February 13).“Questa Guerra e’ una follia: Bush la fa per il petrolio” [This was is a folly: Bush does it for the oil]. *La Repubblica*. Retrieved March 14, 2004, from http://www.repubblica.it/online/politica/noguerra/strada/strada.html

Gilbert, G. N., & Mulkay, M. (1984). *Opening Pandora’s box: a sociological analysis of scientists’ discourse.* Cambridge: Cambridge University Press.

GM food aid and Africa, (n.d.), Retrieved on February, 24, 2004 from http://www.Connectotel.com/gmfood/gmafrica.html

GM Nation, (n.d.). Retrieved November 15, 2004, from http://www.gmnation.org.uk/

Goffman, E. (1963). *Behaviour in public places*. London: Collier-McMillan.

Goffman, E. (1967). *Interaction ritual: Essays on face-to-face behaviour.* N.Y.: Pantheon books.

Goffman, E. (1992). *Forms of Talk.* Philadelphia: Pennsilvania Press.

Goodwin, C. (1987). Forgetfulness as an interactive resource (Special issue on language and society). *Social Psychology Quarterly*, *50*, 115-31.

Gutteling, J. M. et al. (2002). Media Coverage 1973-1996: Trends and Dynamics. In M. Bauer, & G. Gaskell (Eds.), *Biotechnology: the Making of a Global Controversy* (pp. 95-128). Cambridge: Cambridge University Press.

Habermas, J. (1990). *On the logic of the social sciences.* Cambridge: Polity Press. (Original work published 1967).

Heritage, J. (2005). Cognition in discourse. In J. te Molden, & J. Potter (Eds.), *Conversation and cognition* (pp. 184-202). Cambridge: Cambridge University Press.

Hertzberg, H. (2005, August 22) Mired. *The New Yorker*, pp. 21-22.

Hertzlich, C. (1973). *Health and Illness – A social psychological analysis*. London: Academic press.

Holme S. & Harris, J. (1999). Precautionary principle stifles discovery. *Nature.* 400. p. 398-398.

Hubbell, S. (2001). *Shrinking the cat. Genetic Engineering before we knew about genes.* Boston: Houghton Mifflin Company.

Huguet, P., Latanè, B., & Bourgeois, M. (1998). The emergence of a social representation of human rights via interpersonal communication: empirical evidence for the convergence of two theories. *European Journal of Social Psychology, 28*, 831-846.

Jahoda, G. (1988). Critical notes and reflections on "social representations". *European Journal of Social Psychology, 18*, 195-209.

Jaspers, J., & Fraser, C. (1984). Attitudes and social representations. In R. Farr, & S. Moscovici (Eds.), *Social representations* (pp. 101-123). Cambridge: Cambridge University Press.

Jodelet, D. (1989). *Folies et représentations sociales*. Paris: P.U.F.

Karttunnen, Lauri (1974) Presupposition and linguistic context. *Theoretical Linguistics* 1:181-194. Reprinted in S. Davis (ed.) (1991), 406-415.

Kronberger, N., Dahinden, U., Allansdottir, A., Seger, N., Pfenning, U., Gaskell, G., et al. (2001). "The train departed without us" - Public perceptions of biotechnology in ten European countries. *Politeia*, *XVII*(63), 26-36.

International Council for Science. (2003). *New genetics, food and agriculture: scientific discoveries – societal dilemmas*. Retrieved June 4, 2003 from http://www.icsu.org/Gestion/img/ICSU_DOC_DOWNLOAD/90_DD_FILE_ICSU_GMO%20report_May%202003.pdf

Ibañez, T. (1992). Some critical comments about the theory of social representations. Discussion of Rati & Snellman. *Ongoing Production on Social Representations.* Vol 1(1): 21-26.

Lahlou, S. (2002). *Penser manger*. Paris: PUF.

Lassen, Jesper, Allansdottir, A. , Liakopoulos, M., Thing Mortensen, A. & Olofsson, A. (2002) Testing Times - the reception of Roundup Ready soy in Europe. In: Bauer, M.W., & Gaskell, G.

(Eds.). *Biotechnology: The making of a global controversy*. Cambridge: Cambridge University Press, 279 - 312.

Latour, B. (1987). *Science in Action.* Harvard University Press.

Latour, B. and Woolgar, S. (1979). *Laboratory Life: The Social Construction of Scientific Facts.* London: Sage.

Le Agrobiotecnologie nei media italiani. Rapporto conclusivo 2001-2002 a cura dell'Osservatorio di Pavia [Agricultural biotechnologies in the Italian Media. Final report by Osservatorio di Pavia]. (2003). Pavia: Osservatorio di Pavia Media Research.

Levinson, S.(1983). *Pragmatics.* Cambridge: Cambridge University Press.

Lloyd, B. & Duveen, G. (1992). *Gender identities and education: the impact of starting*

school. Hemel Hempsted: Harvester Wheatsheaf.

Manifesto sulle Biotecnologie sottoscritto da C.I.A., Coldiretti, Legambiente, Slow Food [Declaration on Biotechnologies undersigned by C.I.A, Coldiretti, Legambiente, Slowfood]. (n.d.). Retrieved on February 22, 2003, from http://www.slowfood.it/ita/sf_cose/campagne/sf_man_biotecnologie.lasso

Marche Regional Law, N. 5, (2004, March 3).

Marková, I. (2000). Amedéeé or how to get rid of it: Social Representations from a dialogical perspective. *Culture & Psychology,* 6(4):416-460

Martino, R. R., (2003). Introductory remark to the seminar *Ogm: minaccia o speranza?* Pontificio Consiglio della Giustizia e della Pace. November, 10, 2003. Retrieved October, 2004, from http://www.vatican.va/roman_curia/pontifical_councils/justpeace/documents/rc_pc_justpeace_doc_20031110_card-martino-ogm_it.html

Medicina Demoratica [Demoratic Medicine] www.medicinademocratica.org

Meldolesi, A. (2002, November 28). Biotecnologie. Circolare Alemanno blocca le sperimentazioni in agricoltura, anche quelle autorizzate. Alemanno come Pecoraro, ministri anti ricerca. *Il Riformista.*

Meldolesi, A. (2003). Italy employs further GMO delay tactics. *Nature Biotechnology, 21,* 346.

Midden, C., Boy, D., Einsiedel, E., Fjaestad, B., Gaskell, G., Lyakopoulos, M., et al. (2002). Public judgements of biotechnology: attitudes or non-attitudes? In G. Gaskell, et al. (Eds.), *Biotechnology - the making of a global controversy*. Cambridge: Cambridge University Press.

Miller, H. I. (2003). Vox populi. Why should we care? *Nature biotechnology*, 12: 1431.

Moscovici, S. (1973). Foreword. In C. Herzlich (Ed.), *Health and illness: a social psychological analysis*. London: Academic Press.

Moscovici, S. (1976). *La psychanalyse, son image et son public* [Psychoanalysis: its image and its public] (2nd ed.). Paris: Presses Universitaires de France. (Original work published 1961).

Moscovici, S. (1981). Social representations. In J. P. Forgas (Ed.), *Social cognition*. Cambridge: Cambridge Academic Press.

Moscovici, S. (1984a). The myth of the lonely paradigm: a rejoinder. *Social Research, 51*, 939-967.

Moscovici, S. (1984b). The phenomenon of social representations. In R. Farr, & S. Moscovici (Eds.), *Social representations* , 3 - 69. Cambridge: Cambridge University Press.

Moscovici, S. (1985). Comment on Potter and Litton. *British Journal of Social Psychology*, *24*, 91-92.

Moscovici, S. (1988). Notes Towards a Description of Social Representations. *European Journal of Social Psychology, 18*, 211-250.

Moscovici, S. (2001). Why a theory of social representations?, In K. Deaux, G., & Philogene (Eds.), *Representations of the social: Bridging theoretical traditions*. Oxford: Blackwell.

Moscovici, S. & Marková, I. (1998). Presenting Social Representations: A Conversation. *Culture & Psychology,* Vol. 4, No. 3, 371-410.

Ochs, E. (1979a). Transcription as theory. In E. Ochs, & B. Schiefflin (Eds.), *Developmental Pragmatics* (pp. 43 -72). New York: Academic Press.

Ogden, C.K. & Richards, J. A. (1989). *The meaning of meaning.* Harcourt (work originally published 1929)

OGM:De Castro, tolleranza zero nel biologico. (February, 27 2007). Retrieved March, 1, 2007 from: http://www.governo.it/notizie/not_notizia.asp?idno=2875

Opinion of the Scientific Committee on Food concerning a submission from the Italian Authorities raising concerns for the safety of certain products approved under the notification procedure of EU Regulation 258/97. (2000, September 7). Retrieved March, 2002, from http://europa.eu.int/comm/food/fs/sc/scf/out66_en.pdf

Pivetti, M. (2005). *Natural and unnatural* (Social psychological studies 12). University of Helsinki, Department of Social Psychology. Doctoral Dissertation.

Polacchi S. (2000, May 4). Biotech. Ministro contro CNR: "Stop ai campi transgenici" [Biotech. The minister against the National Centre of Research: "Stop to transgenic fields."]. *L'Unità.* Retrieved October, 2001, from http://lgxserver.uniba.it/lei/rassegna/000504e.htm

Pontificia Accademia per la vita, X assemblea generale. (2004, February). *Comunicato finale su "La dignità della procreazione umana e le tecnologie riproduttive. Aspetti antropologici ed etici* [Ponitificial Academy for life. X general assembly, 2004. Final declaration on "The dignity of human procreation and reproductive technologies"]. Retrieved May 7, 2005 from http://www.vatican.va/roman_curia/pontifical_academies/acdlife/documents/rc_pont-acd_life_doc_20040316_x-gen-assembly-final_it.html

Poppe, C., & Kjærnes, U. (2003). Trust in Food in Europe. A Comparative Analysis (National Institute for Consumer Research (SIFO) Professional Report 11-2003). Retrieved May 2, 2005, from http://www.trustinfood.org/SEARCH/BASIS/tif0/all/publics/DDD/24.pdf

Potter, J. & Litton, I. (1985). Some problems underlying the theory of social representations. British Journal of Social Psychology, 24, 81-90.

Potter, J., & Billig, M. (1992). Re-presenting representations. *Ongoing production on social representations, 1*, 15-20.

Potter, J., & Wetherell, M. (1987). *Discourse and social psychology: Beyond attitudes and behaviour.* London: Sage.

Potter, J., & Wetherell, M. (1998). Social representations, discourse analysis and racism. In U. Flick (Ed.) *The psychology of the social.* (pp.138-155).

Potter, J. & Edwards, D. (1999). Social Representations and Discursive Psychology: from Cognition to Action. *Culture & Psychology*. 5 (4) 447-458.

Purkhardt, S. C. (1993). *Transforming social representations. A social psychology of common sense and science.* London: Routledge.

Quaglia G. (2002). *Riso transgenico alle porte di Novara*, La Stampa, 24 Ottobre 2002 [Transgenic rice at the doors of Novara].

Regulation (EC) No 1829/2003 of the European Parliament and of the Council.

Regulation (EC) No 1830/2003 of the European Parliament and of the Council.

Rifkin, J. (1998). *The Biotech century.* NY, Penguin.

Sacks, H. (1992). *Lectures on Conversation.* Vol. I & II. G.Jefferson ed. Oxford: Blackwell.

Sacks H. & Schegloff E. (1979). Two Preferences in the Organization of Reference to Persons in Conversation and Their Interaction,"in G. Psathas (ed.), *Everyday Language: Studies in Ethnomethodology*. NewYork: Irvington Publishers, p. 15-21.

Sacks, H., Schegloff, E. A., & Jefferson, G. (1974). A simplest systematic for turn taking in conversation. *Language, 50*, 697 – 735.

Sbisà, M. (1999). Ideology and the persuasive use of presupposition. In J. Verschueren (ed.), *Language and Ideology. Selected Papers from the 6th International Pragmatics Conference*, Vol. 1. Antwerp: Internatonal Pragmatics Association, 1999, pp. 492-509.

Schauzu, M., 2000. The concept of substantial equivalence in safety assessment of foods

derived from genetically modified organisms. *AgBiotechNet* 2, ABN 044.

Schegloff, E.A., G. Jefferson, H. Sacks (1977). The preference for self correction in the organization of repair in conversation, Language 53: 361-82

Science, society and the citizen in Europe. (2000, November). Commission working document. Commission of the European Communities. Retrieved from, http://europa.eu.int/comm/research/area/pdf/science-society-en.pdf

Shiva, V. (2000). *Stolen Harvest*. Cambridge: South End Press.

Silverstein, M. (1976). Shifters, linguistic categories, and cultural description. In K. Basso, & H Selby (Eds.), *Meaning in Anthropology* (pp. 11-55). Albuquerque: University of New Mexico Press.

Snidico F. (2005). *The GMO Dispute before the WTO: Legal Implications for the Trade and Environment Debate.* (2005). Trieste: Fondazione Enrico Mattei. Retrieved March 22, 2005, from http://www.feem.it/Feem/pub/publications/WPapers/default.htm

Stalnaker, Robert (1973) Presuppositions. *Journal of Philosophical Logic* 2: 447-457.

Stalnaker, Robert (1974) Pragmatic presupposition. In M. Munitz & P. Unger (eds.), *Semantics and philosophy*. New York: New York University Press, 197-214. Reprinted in S. Davis (ed.) (1991), 471-81.

SWG, (2002). G*li Italiani e gli OGM.* Trieste: SWG. [Poll report].

Tassinari, V. (n.d.). La Filiera Socialmente responsabile. Il caso Coop Italia. *Symphonia. Emerging Issues in Management*. Retrieved December 12, 2004, from http://www.unimib.it/symphonya/tassinari-ita-2003.pdf

te Molder, H., & Potter, J. (2005). *Conversation and cognition.* Cambridge: Cambridge University Press.

Tiratura dei quotidiani e settimanali Italiani 2004 e 2005. Fonte ADS (Accertamenti Diffusione Stampa). Retrieved on April 25, 2005, from http://www.primaonline.it/dati/articolo.asp?id=23

Tiratura dei quotidiani Italiani nel 2003. *Pubblicita' Italia.* Retrieved January 3, 2005, from http://www.pubblicitaitalia.it/DatiMediaBook/ads/PDF/ADS_quot_03.pdf

Torgersen, H., Hampel, J., Von Bergmann-Wimberg & others (2002). Promise, problems and proxies: twnty-five years of debate and

regulation in Europe. In: Bauer, M. B. & Gaskell, G. (Eds.) *Biotechnology: the making of a global controversy:* 21-94. Cambridge University Press.

Towards a strategic vision of life sciences and biotechnology. (2001, September 4). Communication from the Commission. Retrieved, July 1, 2002, from www.eu.int/comm/biotechnology/pdf/doc_en.pdf

Uttal, W. R. (2001) The new Phrenology: The Limits of Localizing Cognitive Processes the Brain. Cambridge: MIT.

van Dijk, T. A. (1985). Introduction. The role of discourse analysis in society. In T. A. van Dijk (Ed.), *Handbook of discourse analysis* (Vol. 4). London: Academic Press.

van Dijk, T. A. (1990). Social cognition and discourse. In H. Giles, & P. Robinson (Eds.), *Handbook of language and social psychology*. Chichester: John Wiley.

van Dijk, T. A. (1995). Discourse semantics and ideology. *Discourse & Society*, *6*, 243-289.

van Dijk, T. A. (1998). *Ideology. A multidisciplinary approach.* London: Sage.

van Dijk, T. A. (1999). Discourse, Ideology and Context. *Folia Linguistica, XXXV*, 1-2.

Verga (1999). Gli OGM sono tra noi. [GMOs are among us]. *L'intruso Genetico.*

Verschueren J. (2002). Democracy and diversity. *The school field: international journal of theory and research in education, 13*, 41-59.

Vieri, S. (2004). Presentation to the "I Congresso Internazionale CDG Scienza e società. Le frontiere dell'invisibile".16 and 17 October 2004, Lastra e Signa. [Audiorecording].

Voelklein, C. & Howard, C. , (2005). A Review of Controversies about Social Representations Theory: A British Debate. *Culture & Psychology*. 11, 431 – 454.

Wagner W. Duveen, G. , Farr, R., Jovchelovitch, S., Lorenzi-Cioldi, F. Marková I. & Rose D. (1999). Theory and Method of Social Representations *Asian Journal of Social Psychology*. Volume 2

Wagner, W. (1998). Social representations and beyond: Brute facts, symbolic coping and domesticated worlds. Culture & Psychology, 4, p. 297-329.

Wagner, W., & Kronberger, N. (2001). Killer Tomatoes! Collective symbolic coping with biotechnology. In K. Deaux, & G. Philogene (Eds.), *Representations of the social - bridging theoretical traditions.* Oxford: Blackwell.

Wagner, W., Elejabarrieta, F., & Lahnsteiner, I. (1995). How the sperm dominates the ovum: Objectification by metaphor in the social representation of reproduction. *European Journal of Social Psychology, 25,* 671–688.

Wagner, W., Kronberger, N., & Seifert, F. (2002). Collective symbolic coping with new technology: Knowledge, images and public discourse. *British Journal of Social Psychology*, *41,* 323-343.

Wagner, W., Kronemberg, N., Allum, N., Correia Jesuino, J., De Cheveigné, S., Diego, C., et al. (2002). Pandora's Genes - Images of Biotechnology and Nature in Europe. In G. Gaskell, et al. (Eds.), *Biotechnology - the making of a global controversy*. Cambridge: Cambridge University Press.

Wagner, W., Kronberger, N., Gaskell, G., Allum, N., Allansdottir, A., Cheveigné, S., et al. (2001). Nature in disorder: The troubled public of biotechnology. In M. Bauer, G. Gaskell, & J. Durant (Eds.), *The years of controversy: Biotechnology 1996-1999*. (pp. 80-95). London: Museum of Science and Industry.

Wagner, W. & Hayes, N. (2005). *Everyday discourse and common sense.* Palgrave.

Weckman, R. (n.d.) Will consumers see the benefits of genetically modified crops? *University of Kentuky College of Agriculture Magazine.* Retrieved June 5, 2005, from http://www.ca.uky.edu/AGC/Magazine/2000/FALL2000/ARTICLES/htmlfiles/genetically_modified.htm

Wetherell, M. Taylor, S., & Yates, S. (Eds.). (2001). *Discourse theory and practice.* London: Sage.

Wetherell., M. (2001). Debates in discourse research. In M. Wetherell, M., S. Taylor, & S. Yates, eds. *Discourse theory and practice.* London: Sage: 381-399.

Wetherell, M., & Potter, J. (1988). Discourse analysis and the identification of interpretative repertoires. In C. Antaki (Ed.), *Analysing everyday explanation: a casebook of methods* (pp. 168-183). London: Sage.

Wetherell, M., & Potter, J. (1992). *Mapping the language of racism. Discourse and the legitimation of exploitation.* Hemel Hempstead: Harvester Wheatsheaf.

Willig, C. (2001) *Introducing qualitative research in psychology.* Buckingham: Open University Press.

Wittgenstein, L. (1958). *Philosophical Investigations.* Third edition. New York, The Macmillan company. (Original work published 1953).

Worldwide Biotech Crops Experience Near Record Growth. (2005, January 12). *ISAAA Press Release*. Retrieved May 2, 2005, from http://www.isaaa.org/kc/CBTNews/press_release/briefs32/News_release/English.pdf

Wynne, B. (1995). Public Understanding of Science. In S. Jasanoff, G. E. Markle, J. C. Petersen, & T. Pinch (Eds.), *Handbook of Science and Technology Studies* (pp. 361-388). Thousand Oaks: Sage.

Zaltman, G. (2003). *How customers think.* Harvard Business School Press.

10 APPENDIX

10.1 List of data of the field trial

In the following I list all the data collected and analyzed during the ethnographic study I discuss. E.C. and G.P. stand for Elena Collavin and Giuseppe Pellegrini and indicate the researcher who collected the data.

Documents from the official procedure for the authorization of the field trial:

SNIF: Summary Notification Information File, which is the request of authorization filed by the applying university to the authorizing body (the Health Ministry in Rome), in which the purpose and details of the experiment are described.

Authorization to conduct the experiment, sent by the competent authority, the Health Ministry, to the applicant.

Two letters from the Health Ministry which notify that an authorization has been given for the field trial: one letter was sent to the Regional competent Authority of Agriculture Development, one to the Regional President.

Interview with the civil servant head of the Health Ministry office in Rome, in charge of the applications for obtaining authorizations to carry out a field trial (E.C., 65 minutes, recorded)

Interview with the scientist in charge of the experiment (E.C., 50 minutes, recorded)

Telephone interview with the seed dealer who provided the GM seeds for the trial (E.C., about 40 minutes, not recorded, field notes)

Interview with the civil servant in charge of Agriculture development in the region, who received information that a field trial had been authorized on his territory; he was in charge of appointing inspectors (E.C., G.P., 104 minutes, recorded)

Interview with the two ARPA (Regional Agency for Environment Protection) experts in charge of the safety of the field trial, who conducted several inspections at the site (E.C., G.P., 70 minutes, recorded)

Interview with the mayor of the council where the trial takes place (E.C., 45 minutes, recorded)

On the day of an inspection before the harvest also the following data were collected literally in the field or while driving to the field:

Conversation with the Regional civil servant in charge and with two field inspectors in the car on the way to the field (E.C., about 50 minutes, recorded)

Interview with a second scientist in charge of the experiment (E.C., G.P., 25 minutes, recorded)

Interview with the agronomist responsible for the cultivation of the field (E.C., G.P., 18 minutes, recorded)

Interview with the farmer who lent his land to the university for the trial (E.C., G.P., 4 minutes, recorded)

Conversation with the mayor of the village on the opportunity of organizing a public encounter about the experiment (E.C., G. P., 70 minutes, recorded)

Public encounter on the topic of the field trial (E.C.. G.P., 143 minutes, recorded)

Focus group with stakeholders on the topic of the trial (E.C., G. P., 138 minutes, recorded)

Four national newspaper articles reporting on the public meeting

Recording of an interview to the mayor on a national public radio channel (8 minutes)

Meeting with the Inter Ministerial Commission for Biotechnologies, the responsible decision-making body charged with advising the executive authority (Health Ministry) on the authorizations for GMOs experiments (E.C., G. P., about 45 minutes, not recorded)

Conversations with nine citizens of the village and the mayor (E.C., a total of 210 minutes, recorded)

Field notes documenting the whole process of data collection and research progress (7 copybooks)
About 80% of all the recordings have been transcribed. Data have been organized and analyzed using Scientific Software's Atlas-Ti.

10.2 Transcription conventions

Sindaco;	at the beginning of each turn identifies the speaker
=	latching in the same or contiguous turns across lines
:	extension of a sound
.	a fall in tone, not necessarily the end of a sentence
,	a continuous intonation, not necessarily between clauses of sentences
?	rising inflection, not necessarily a question mark
-	self or other repair. For instance "del po-della popolazione"
[ ]	the line above and the one below within parentheses are uttered in overlap
> <	talk is faster then surrounding talk
< >	talk is slower then surrounding talk
hh	audible exhalation
.hh	audible inhalation
devono <u>sapere</u>	emphasis
(non ancora)	best guess of the transcriber, uncertain transcription

ALLORA	a stretch of talk louder then the s urrounding talk
(.)	a short silence, untimed
(1,5)	a timed silence, in seconds
((looking at her hand))	paralinguistic features of importance and comments of the analyst
((omissis))	signals that a part of the talk has been omitted

Transcription conventions are an adaptation from Gail Jefferson's notation in Sacks, Schegloff and Jefferson (1974) and Atkinson and Heritage (1984).

10.3 The "anti-transgenic" declaration of Bubbio Council, 13 August 1999

COMUNE DI BUBBIO
Provincia di Asti

COMUNE ANTITRANSGENICO

La Giunta Comunale

PRESO ATTO che l'introduzione in agricoltura degli Organismi Geneticamente Modificati (OGM) ha sollevato notevoli dubbi e perplessità nell'opinione pubblica

per motivi etici

per le conseguenze sulla salute dei cittadini

per i rischi di danni irreversibili all'ecosistema

per l'ulteriore divario che creerebbe tra i Paesi ricchi e quelli in via di sviluppo;

CONSIDERATO che il nuovo modello di agricoltura proposto è in netta contrapposizione con quello oggi attuato nella nostra zona fortemente legata alle tradizioni e alle caratteristiche del territorio;

RITENUTO pertanto, alla luce di quanto sopra, di prendere posizione contraria, per quanto di competenza, all'introduzione in agricoltura degli Organismi Geneticamente Modificati;

PRESO ATTO del parere favorevole del Segretario Comunale ai sensi dell'art. 53 della Legge 142/90 in ordine alla regolarità tecnico-amministrativa del presente provvedimento;

CON VOTI unanimi e concordi espressi per alzata di mano;

DELIBERA

di dichiarare il Comune di Bubbio "Comune Antitransgenico"

di affiggere sotto i cartelli di ingresso del paese la scritta "Comune Antitransgenico"

di vietare su tutto il territorio comunale la sperimentazione,la coltivazionee l'allevamento di Organismi Viventi, sia vegetali sia animali, ottenutu mediante manipolazione genetica

di creare un'apposita commissione comunale composta inizialmente dal Vice sindaco e da due consiglieri e che potrà essere in futuro allargata ad altre figure per perseguire i seguenti obiettivi:

informare attraverso incontri, manifesti e comunicazioni scritte i produttori presenti sul territorio comunale (Vitivinicoltori, Salumifici, Pasticcerie, Pastifici, ecc.) sui rischi di utilizzo di prodotti geneticamente modificati nella catena produttiva (es. uova di galline allevati con mangimi derivati da OGM, lieviti selezionati, enzimi, batteri, acido ascorbico ottenuti con metodi che prevedono l'utilizzo di OGM, ecc)

informare attraverso incontri, manifesti e comunicazioni scritte i rivenditori presenti sul territorio comunale sui rischi di vendita di alimenti di case accusate di utilizzare prodotti geneticamente modificati nella catena riproduttiva

informare attraverso incontri, manifesti e comunicazioni scritte i cittadini sui rischi legati al consumo di prodotti ottenuti con OGM ed avviare una seria campagna di educazione alimentare legata al consumo di prodotti tradizionali di qualità

prevedere durante le manifestazioni organizzate dalla Pro-Loco di Bubbio un'efficace promozione dei prodotti locali divulgando nel modo più efficace il messaggio contro i prodotti geneticamente modificati.

Dal Decreto Legislativo 224/Agosto 2003

L'autorità di cui al comma 1, rilascia il provvedimento di autorizzazione sulla base:
a) delle verifiche effettuate dalla Commissione di cui all'articolo 6 per accertare che le autorizzazioni all'emissione deliberata nell'ambiente a scopo sperimentale e alla immissione sul mercato siano conformi alle disposizioni del presente decreto;
b) delle valutazioni di possibili effetti sulla salute umana, animale e sull'ambiente con particolare attenzione agli ecosistemi naturali;
c) della compatibilità dell'emissione deliberata nell'ambiente o dell'immissione sul mercato con l'esigenza di tutela dell'agrobiodiversità, dei sistemi agrari e della filiera agroalimentare, con particolare riferimento ai prodotti tipici, biologici e di qualità.

10.4 The introductory speech of Cardinal Raffaele Martino at the conference: “GMOs: threat or hope”

PONTIFICIO CONSIGLIO DELLA GIUSTIZIA E DELLA PACE

SEMINARIO DI STUDIO SUL TEMA: "OGM: MINACCIA O SPERANZA?"

INTERVENTO DEL CARD. RENATO RAFFAELE MARTINO

Palazzo san Calisto
Lunedì, 10 novembre 2003

Saluto e ringrazio sentitamente tutti i partecipanti di aver accolto, con generosa disponibilità, l'invito a portare a questo Seminario il loro qualificato contributo di scienza e di esperienza, che sarà utilissimo nel chiarire e illuminare le complesse questioni riguardanti gli OGM. Spero che questa occasione di incontro e di studio diventi per tutti noi uno stimolo alla crescita personale e, nello stesso tempo, un'opportunità di esercizio di una comune e condivisa responsabilità.

Il Pontificio Consiglio della Giustizia e della Pace ha organizzato e promosso questo incontro nell'intento di raccogliere il maggior numero di dati informativi sugli OGM, che, in seguito, potranno servire a sussidiare un discernimento etico e pastorale, giorno dopo giorno sempre più necessario e indilazionabile. Al di là delle pressioni - provenienti da molteplici fonti e portatrici di esigenze diversificate e, in qualche modo, incompatibili a cui anche la Santa Sede è sottoposta - vorremmo che questo Seminario si svolgesse in un clima di serenità e di compostezza, sì da favorire lo scambio fruttuoso, il dialogo approfondito e la ricerca disinteressata.

Il titolo del nostro Seminario, "OGM: minaccia o speranza?", riassume bene i differenti approcci che, a diversi livelli, si stabiliscono con gli OGM. Da parte nostra, siamo pienamente consapevoli che la posta in gioco è alta e delicata, per le polarizzazioni che dividono l'opinione pubblica, per i contenziosi commerciali che esistono a livello internazionale, per la difficoltà a definire, a livello scientifico, una materia che è oggetto di una ricerca in rapida evoluzione, per le complesse implicazioni etico-culturali ed etico-politiche. Da parte di questo Pontificio Consiglio si avverte tutta la responsabilità di dover affrontare una problematica tanto complicata, che ripropone, per certi versi, la domanda relativa al rapporto tra fede e scienza; questo Dicastero se ne vuole anzi fare carico pienamente, facendo tesoro della vostra scienza ed esperienza e, nello stesso tempo, appoggiandosi alla secolare sapienza della Chiesa e alla sua dottrina, che gli permetteranno di trovare, con equilibrio e nella verità, un punto di sintesi utile e fecondo di bene per gli uomini del nostro tempo, soprattutto per i poveri.

Dal programma dei lavori si può facilmente vedere che il Seminario è stato strutturato in quattro sessioni di lavoro: OGM e ricerca scientifica; OGM, alimentazione e commercio; OGM e sicurezza ambientale e sanitaria; OGM e implicazioni morali.

Dal punto di vista metodologico, il cuore dei nostri lavori sarà il dibattito in comune dei temi che saranno brevemente introdotti da alcuni relatori. Il dibattito dovrà essere svolto in libertà, nel rispetto delle diverse posizioni e reso ricco dalle straordinarie competenze presenti in questa sala.

Tra i partecipanti al nostro Seminario figurano anche alcuni Ministri del Governo italiano, la cui presenza merita una parola di giustificazione: è sembrato quantomai opportuno invitarli in ragione del fatto che l'Italia detiene in questo semestre del 2003 la Presidenza del Consiglio dell'Unione Europea. Desidero ringraziarli di aver accettato l'invito e del contribuito che offriranno ai nostri lavori. Al termine di ogni sessione è previsto un incontro con la stampa per fornire ai giornalisti un'informazione puntuale e adeguata.

Molti hanno manifestato un po' di stupore e di meraviglia di fronte a questa iniziativa del Pontificio Consiglio, chiedendosi quale fosse la ragione che la giustificasse. Si tratta, anche in questo caso, di dare seguito a un'esigenza profonda ed essenziale della missione religiosa e morale della Chiesa, quella di illuminare con la luce del Vangelo quanto riguarda la promozione dell'uomo e l'affermazione della sua dignità. La Chiesa lo fa, rispettando la legge naturale, mettendo a frutto i risultati della ricerca scientifica, attualizzando il messaggio delle Sacre Scritture e applicando i principi della sua dottrina sociale.

A tale proposito, e a conclusione di questa mia breve introduzione, permettetemi di condividere con voi la lezione, molto pertinente e istruttiva, che ci viene dai primi capitoli della Bibbia dove si parla della creazione. Nel disegno del Creatore, infatti, le realtà create, buone in se stesse, esistono in funzione dell'uomo. Creandolo a sua immagine e somiglianza, Egli vuole che "domini sui pesci del mare e sugli uccelli del cielo, sul bestiame, su tutte le bestie selvatiche e su tutti i rettili che strisciano sulla terra" (Gen 1, 26).

Lo stupore davanti al mistero della grandezza dell'uomo fa esclamare il salmista: "Che cosa è l'uomo perché te ne ricordi e il figlio dell'uomo perché te ne curi? Eppure l'hai fatto poco meno degli angeli, di gloria e di onore lo hai coronato; gli hai dato potere sulle opere delle tue mani, tutto hai posto sotto i suoi piedi" (Sal 8, 5-7).

Il dominio dell'uomo sugli altri esseri viventi, tuttavia, non deve essere un dominio dispotico e dissennato; al contrario, egli deve "coltivare e custodire" i beni creati da Dio. Beni che l'uomo ha ricevuti come un dono prezioso, posto dal Creatore sotto la sua responsabilità.

La proibizione di mangiare "dell'albero della conoscenza del bene e del male" (Gen 2, 17) ricorda all'uomo che egli ha ricevuto tutto come dono gratuito e che continua ad essere una creatura, e non sarà mai il Creatore. Il peccato dei nostri padri fu provocato proprio da questa tentazione: "diventereste come Dio" (Gen 3, 5). Adamo ed Eva vollero avere il dominio assoluto su tutte le cose, senza sottomettersi alla volontà del Creatore. Da allora l'uomo dovrà trarre il cibo dal suolo con dolore e con il sudore del suo volto mangiare il pane (Gen 3, 17-19).

Nonostante il peccato, il disegno del Creatore, il senso delle sue creature e, tra queste, dell'uomo, chiamato ad essere coltivatore e custode del creato, rimangono inalterati. L'uomo, dotato di un'intelligenza grazie alla quale è capace di cogliere il senso delle cose, deve custodire i beni della terra, da lui ricevuti come dono. Dotato della capacità di scoprire le cause, le leggi e i meccanismi che governano gli esseri, viventi e non, e conseguentemente capace di intervenire su di essi, deve utilizzare queste capacità per "coltivare" e non per distruggere. Coltivare significa intervenire, decidere, fare, non lasciare che le piante crescano a caso. Coltivare significa potenziare e perfezionare, affinché vengano frutti migliori e più abbondanti. Coltivare significa ordinare, pulire, eliminare ciò che distrugge e rovina. Coltivare è il miglior modo di custodire.

Grazie a tutti e buon lavoro!