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**Agonistic spaces, contentious politics and the trials of
governance: Environmental policies and conflict in
Portugal**

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1. Introduction

Portugal has been characterized by a number of sociological studies as a semiperipheral country. At the same time, however, it is a member country of one of the core regions of the world system, the European Union. This peculiar situation of being, at the same time, "in" the core but not "of" the core endows Portugal with a number of specific features which are crucial to the understanding of the current situation regarding science and technology and their governance. Portugal displays an intermediate level of development and finds itself in a privileged position as an intermediary between the core countries and the peripheral and semiperipheral countries of Africa and Latin America (Santos, 1990, 1994, 2001), namely those which were part of the former Portuguese colonial empire. The semiperipheral condition relates not only to the country's position and role within a transnational economic and political space, but involves as well a number of features of its economic structure, social relations, the dynamics of state/society relations, the organization and functioning of the State, and its political culture. Having lived for almost half a century (up to 1974) under a fascist dictatorship, Portuguese society still bears the marks of the deliberate suppression of civil liberties and of the conditions for active citizenship. Among the features that will be of relevance to the discussion that follows, the following can be singled out:

- The absence of a strong and organized civil society, largely as a consequence of its active repression by the dictatorship, and, after the plethora of citizen and popular initiatives in 1974-75, in the wake of the Revolution, of a process of "normalization" which discarded citizen participation as a contribution to democracy;

- A weak welfare state, based on a generous recognition of social and economic rights, but suffering from a chronic lack of resources to enact them;
- A strong welfare society, with a significant reliance on family and neighbours as surrogates for weak public welfare provision;
- During periods of crisis, in particular, a discrepancy between official economic indicators and actual practices of consumption, largely due to the existence of "informal" sources of revenue, such as small-scale farming;
- A significant and persistent gap between the formal definition of citizens' rights and the actual access to those rights;
- A discrepancy between advanced legislation and conservative social practices.

These main features are strongly related to historical developments. From 1926 to 1974, Portugal lived under a dictatorship, which suppressed basic political and civil rights. In April 25, 1974, a military coup brought the regime down. Since then, Portugal passed through three distinctive periods, which can be characterized as: the revolutionary period (1974-76), the 'normalization' period (1976-mid 80s), and the 'europeanization' of the democratic regime (1985 onwards).

The first period was characterized by active popular mobilization and rapid and broad social and political change, and the second by a pervasive instability. After Portugal joined the EC (formally in 1986), there was a broad redefinition of legal frameworks or their creation almost from scratch (especially in areas like environment or consumer protection), as well as the re-emergence of public participation as a concern. On the other hand, this process opened up the possibility for citizens to invoke European directives or legislation to oppose government or the state whenever citizens felt that their rights were being violated or threatened. The gap between legal frameworks and social, political and

administrative practices remained, however, as a pervasive feature of state-society relations since 1976. After joining the EC, additional aspects of this feature became visible:

- a) The use of opposite discourses in international fora and for domestic consumption by the Portuguese government (e.g. on environmental issues);
- b) The lack of transposition of European directives into domestic law or their delay;
- c) The lack of enforcement of directives transposed into domestic law.

The case-studies selected for this project bring to the fore the main features that have been associated with the latest phase of Portuguese history, the phase we describe as “europeanization”. They provide “thick” illustrations of two different sides of the science-technology-governance nexus, policy-for-science and science-for-policy. We shall deal here with the case of hazardous waste. Our approach is based on a “flexible” appropriation of the extended-case method (Burawoy et al, 1991, 2000). This entails the use of a range of research techniques in configurations which vary depending on the type of data available and on the situational conditions. Cases were selected on the basis of their exemplarity and density in relation to central concerns of this project. Each case study provides entry points into the most relevant features of the governance of science and technology in Portugal.

2. Hazardous waste: policies and conflict

The management of hazardous industrial waste and the conflicts arising from policies in this area provide a convenient entry point into issues of “science for policy”. This case is focused on the conflicts over the siting of facilities for the co-

incineration of hazardous waste in cement kilns. Its links to themes such as scientific controversy and scientific advice and its institutionalisation, citizen mobilization and participation, public debate, representation and participation, knowledge/power configurations and the relationships among levels of regulation (national, European and global) make it an exemplary instance of the rare instances of the enactment of “science for policy” in Portugal.

Waste management has been a central issue in Portugal over recent years. The first attempt to define a strategy for it dates from 1985 with the publication of the first law on the subject. In 1987, the first comprehensive legal framework on the environment was issued (*Lei de Bases do Ambiente*)¹. These legal initiatives, however, were of little practical consequence as far as the enactment of effective public policies goes. Only after the creation of the Ministry of Environment, in 1990, did the Portuguese government take the first steps towards an integrated environmental policy. The more active stance of the government in environmental matters is directly related to Portugal’s admission into the EC in 1986, which led to a significant improvement of environmental legislation in several areas, on the basis of the incorporation of European directives and of the application of the EU regulations.

Since 1995, with the coming to power of the Socialist party, waste management became a central theme of environmental policy, with a focus on industrial and household waste management. The government tried to centralize authority over the field through the creation of the Institute for Waste (*Instituto de Resíduos*), in 1996. The latter was in charge of the elaboration of the Strategic Plans for Solid Household Waste, Hospital Waste, Industrial Waste and Agricultural Waste. The total amounts of industrial, household, hospital and agricultural waste produced

each year or already disposed of in dumping sites or landfills have only recently (2003) been the object of a systematic inventory. In fact, before that date, all the values used for the definition of management strategies were calculated relying on estimates made for different purposes and by a range of institutions and on partially available information. For instance, some of these estimates originated in the EU, which in turn relied upon estimates elaborated by Portuguese authorities on the basis of extrapolations from data from other European countries...

Over the last years, many situations of conflict arose in which citizens were opposed to government over environmental issues. Among the most visible are those related to waste management policies: Estarreja (1995-1997), Maceira (1997-2000), Souselas (1998-2002) and Outão (2000-2002), over the construction of sites for the incineration or co-incineration of industrial waste; and Taveiro (1997) and Bigorne (2000), related to the siting of landfills for household waste. Of all these situations, the conflicts over the co-incineration of hazardous industrial waste are the most interesting for our purposes, particularly the one centred in Souselas, a small village of 3000 inhabitants, 5 km to the North of Coimbra, in Central Portugal.

In 1996, Scoreco – a consortium formed by the two Portuguese cement companies (Cimpor and Secil) and a French company (Suez Lyonnaise des Eaux) – was created in order to enact the process of co-incineration². Souselas was one of the four possibilities for the location of the co-incinerators, which were presented in July 1998 together with the Environmental Impact Assessment study made by Scoreco. After public discussion of this study, Souselas was finally defined as one

¹ Law 11/87, from July 7, 1897.

² Co-incineration is a process of thermic treatment of waste consisting in combustion in the presence of oxygen. When co-incineration of hazardous industrial waste is performed in cement kilns, part of

of the two locations of the co-incineration sites in December 1998. The protests and discussions began – during this period a Committee for Struggle Against Co-Incineration (CLCC) was created³ –, and for several months this conflict was to be the main issue in both national and local political debate. The key moments in a period of over three years of controversy and protest were the following:

- January 1999: some of the local movements of Souselas delivered a petition to Parliament with more than 50,000 signatures, calling for the government's decision on the location of the co-incineration site to be revoked;
- All the opposition parties represented in Parliament joined the protest movement;
- February 1999: a proposal submitted by the Social Democratic Party (in opposition) was passed in Parliament calling for the suspension of co-incineration until a scientific commission could determine whether or not it was the most secure method for the treatment of hazardous industrial waste;
- April 1999: the legal framework for setting up what came to be called the Independent Scientific Commission (CCI) was completed. In fact, two laws were drafted, one by the Parliament – creating the “Independent Scientific Commission for the Treatment of Dangerous Industrial Waste” (Law 20/99) – and another one by the government – creating the “Independent Scientific Commission for the Environmental Control and Supervision of Co-

the fossil fuel used by these units is replaced by waste. This means that co-incineration is a cheap form of generating energy for cement kilns.

³ This committee was originally composed by the Coimbra civic association “Pro Urbe”, the Souselas Association for the Defence of the Environment (ADAS), the Souselas Parish Council, the Central Regional Teachers' Union, the Coimbra branch of Quercus (the largest national environmental association), and the Coimbra Trade and Industry Association (ACIC). They were joined at a later stage by the Coimbra branch of the National Coordinating Committee Against Toxic Waste (CNCT), the Ecology Group of the Coimbra Student Union, and the “Ruptura” movement (a radical political movement).

Incineration" (Decree-Law 120/99). The "dual" regulation of the CCI was 'solved' by another law, issued on the same day by the government (Decree-Law 121/99), stating that the two Commissions should be considered one and the same, the (narrower) government's definition of the scope of the task of the commission prevailing;

- December 1999: the CCI⁴ started its activity. The internal divisions within the scientific community over the process became more visible;
- April 2000: the protest movement organized the first session of the "International Forum on Co-Incineration", focusing on alternatives to that process, with the participation of a specialist in cement kilns, a specialist in clean production, an official of the European Commission (expert in strategies for waste management) and a representative of the Portuguese Ministry of the Environment. Somewhat behind schedule, the results of the CCI study were strategically announced the day before the Forum started. In an interview to a national newspaper the Minister of Environment declared that «four scientists are in full agreement. It is now time for a political decision on the matter based on science and objective knowledge and not on prejudice, ignorance or demagogy» (*Público*, May 20, 2000). The report was strongly criticized by scientists and actors aligned with the protest movement and by environmental associations. One of the most vulnerable aspects of the report derives from the fact that, contrary to previous promises of the government, data related to the production and destination of waste in Portugal was still unknown. The report of the CCI, however, rested upon estimates of doubtful reliability of the amount

⁴ The CCI was composed of an engineer, a professor of environmental studies, a professor of epidemiology, and a professor of chemistry.

of hazardous industrial waste produced in Portugal and of the proportion of that waste that was to be co-incinerated;

- June 2000: A second session of the Forum, on public participation, gathered activists, counter-experts and social scientists who discussed the political and social dimensions of industrial waste management and citizen participation.
- End of June 2000: The petition originating in Coimbra (the largest local petition ever) was finally discussed in Parliament. Less than two dozen MPs were present, and by the time it was discussed most of its content had been made obsolete by the dynamics of the process;
- July/August 2000: A parliamentary initiative by the Green Party led to another halt in the process until the risks of co-incineration for public health were evaluated. A second committee of experts – the Medical Working Group (GTM) – was formed as part of the CCI to assess these effects. The group was chaired by a member of the CCI.
- December 2000: The findings of the GTM were released. They stated that co-incineration had no harmful effects on the health of local populations, concluding that with controlled emissions the risks were ‘socially acceptable’. One of the members of the GTM, however, voted against the report, providing the protest movement with arguments to contest the conclusions of the working group. In fact, in a public meeting held after the release of the results, the same member of the GTM stated that the conclusions of the report had been agreed upon by the majority of the members of the Group at the very beginning of its first meeting;

- The publication of the GTM report was accompanied by a 'new version' of the CCI report, with the deletion of some of the descriptions and references that had been the target of the strongest criticism by the protest movement;
- January 2001: Based on data from the Regional Health Office, some local associations in partnership with the University of Coimbra Institute of Hygiene and Social Medicine, suggested that the prevalence of some types of pathologies associated with environmental factors, such as respiratory pathologies and breast cancer, was higher in Souselas than in every other parish of the Coimbra district;
- March 2001: The Director of the Scientific Unit of Greenpeace declared that the co-incineration of hazardous industrial waste in the neighbourhood of populated areas or of a natural park (the other site that had been proposed by the CCI, Outão) was an "irresponsible" decision of the Portuguese authorities, and as such should be condemned;
- April 2001: The public discussion of the GTM report came to an end. The Minister decided to start the tests of the co-incineration procedures in the cement kilns. Concurrently with the tests, the CCI was expected to carry out an epidemiological study of the population of Souselas;
- May 2001: The epidemiological study was the target of a generalized boycott. Only 2% of the local population appeared when summoned;
- July 2001: The tests of co-incineration begin under another 'wave' of protests;
- October 2001: The results of the tests are publicized by the CCI. They are interpreted as enforcing the option for co-incineration as a reliable and safe method for the management of hazardous industrial waste;

- November 2001: the CLCC presents a counter-report of the results presented by the CCI, based on the same data, in order to show that for almost every single parameter measured the level of emissions was higher with co-incineration than before;
- December 2001: At the local elections, the government party suffers a heavy defeat. The prime-minister resigns in the aftermath of the election;
- In March 2002, the electoral defeat of the Socialist Party in national legislative elections and the rise to power of a center-right coalition led by the Social Democratic Party brings the process to an end. The decision is made to abandon co-incineration as a method for treating hazardous industrial waste and to resume the task of both completing an inventory of hazardous waste in Portugal and defining a comprehensive strategy for their management.

The controversy over the decision to turn co-incineration into the main mode of hazardous waste disposal brought the debates on environmental strategies, citizen participation, scientific expertise, democracy and science and state-society relations to the public scene. With broad media coverage, the controversies around this issue fuelled public debate involving local populations, environmentalist associations, scientists, experts, local governments, national parties represented in parliament and the national government. Two scientific reports were issued (one focusing on the process, and the other one on the impacts on public health). Both were strongly criticized and opened up a broader space of debate among all the actors involved. During the sixty days the medical report was open to public discussion, 11,650 written comments were sent to the Ministry of Environment contesting the results, but not a single one was considered relevant to the final decision on whether the process should advance or not. Another example of how the public was treated in this process was the silence over a period of almost

eighteen months on the largest local petition ever delivered to Parliament. This petition, promoted by the Environmental Association of Souselas, asked for the suspension of the process until more detailed studies were available, and was signed by more than 50,000 persons.

But both scientific debates and citizen actions as legitimate contributions to a public controversy were ignored by government. In fact, the only scientists taken into account in the decision-making processes were the members of the Scientific Committees who drafted the two reports mentioned above. This can be explained by the fact that the Portuguese state has little experience in risk management issues and these, therefore, have been subjected to conventional political strategies, revealing a complete lack of trust and belief in any form of citizen participation, to the point of transforming public consultations into mere formalities. To this should be added that the government and the scientists and experts appointed to the CCI dealt with this controversial scientific and technical issue as if it could be reduced to a routine process of risk assessment.

This case is also exemplary from the point of view of the behaviour of the Portuguese state within the European Community, namely the dual discourse produced for international and domestic purposes concerning environmental regulation, on the one hand, and, on the other, the emergence of a new space and new instances of legitimation which became available to action by environmental and citizen associations⁵.

⁵ The Portuguese government have signed the Stockholm Convention on Persistent Organic Pollutants (UNEP/POPS/CONF4, 5 June 2001), which banned processes likely to generate significant emissions of Persistent Organic Pollutants, including co-incineration. For domestic purposes, however, the same government repeatedly insisted that the Convention was fully compatible with the option for co-incineration. These double standards were denounced by the protest movements.

Interestingly, the European Union also became a resource for social movements. As European legislation is more advanced than national legislation in some areas related to the environment, social movements have frequently sought some backing in European directives which support their claims. In addition, they can take into account protest movements which have emerged in other European countries and can learn from previous situations and from the solutions developed in other contexts. Bearing this in mind, we suggest that Portuguese social movements took advantage of their short and recent history to draw in a selective way on other European experiences, appropriating and adapting some of the most innovative initiatives and avoiding responses that had failed in other contexts.

3. Agonistic spaces: Program(s) and Anti-Program(s)

This process can be framed as the emergence and reordering of an agonistic space, with a range of heterogeneous actors clustering around what, in Latourian terms, may be described as a *program* and an *anti-program* (Latour, 1992, 1999; Akrich and Latour, 1992). According to Latour, these terms have been coined in social studies of technology to

give technical artefacts their active and often polemical character. Each device anticipates what other actors, humans or non-humans, may do (programs of action), but these anticipated actions may not occur because those other actors have different programs - anti-programs from the point of view of the first actor. Hence the artefact becomes the front line of a controversy between programs and anti-programs (Latour, 1999: 309).

An artefact - the technology through which co-incineration is performed - is certainly at the centre of the co-incineration controversy. But what is at stake is more than an assessment of the adequacy of a technology for a given purpose (to treat hazardous industrial waste in such a way that it generates the least possible unwanted effects upon the environment and public health). Above all, what is at issue is the definition of the *legitimate agonistic space* within which that assessment will take place - that is, of the space within which the issue may be subject to debate and of the actors who are admitted in this space as legitimate participants (Michael, 1996: 97-102). On one side, we find the Government, the majority of the members of Parliament representing the party supporting the Government (the Socialist Party), the cement industry, the consortium associated with the latter (Scoreco) and a part of the scientific community. On the other side were a large part of the residents of Souselas, a considerable fraction of the population of Coimbra, the opposition parties, the national and local environmentalist movements and associations, citizen associations, local media, local government, trade-unions and another part of the scientific community.

From the point of view of the Program, the legitimate agonistic space included, on the one hand, a space confined to scientific and technical discussion associated with the scientific areas represented in the Independent Scientific Committee (CCI) and to a core set of experts⁶; and, on the other hand, politicians in office, namely the members of the Government, who would be entitled to make decisions based on scientific advice.

From the point of view of the Anti-program, the legitimate agonistic space included the spokespersons for different positions within the scientific community

⁶ We are adapting here Collins's (1992) concept of the core set.

and coming from a range of disciplines broader than the one represented in the CCI, as well as the citizens affected by the policies being discussed, their movements, associations and spokespersons.

The first conception of the legitimate agonistic space defines the latter as a space of scientific and technical discussion, oriented towards the search for consensus in matters of a scientific and technical nature. Once the CCI was endowed with the authority to speak out on the "good" solution to the problem, any extension of the debate beyond the scientific and technical dimension would be considered as illegitimate, in so far as it would only be able to oppose the rational and objective criteria of science on the basis of irrationality, emotion or demagoguery. The alternative conception of the agonistic space, however, underlined the controversial features of scientists' statements, the existence of opposing positions sustained by specialists with scientific credentials at least comparable or equivalent to those of the scientists who were part of the CCI, and the need to broaden the range of fields of knowledge involved in the debate. At another level, the Anti-program hinted at the inseparability of the scientific-technical and political dimensions and was clear not only on the legitimacy of citizen participation in debate and deliberation, but on its necessity as well.

In other words, the first conception, associated with what we call here the Program, corresponds to a confinement of the legitimate space of debate and deliberation, on the basis of either the ownership of appropriate scientific credentials or of having been elected or nominated into office. The conception associated with the Anti-program, in contrast, tended to favour the broadening of that space, both from the scientific-technical and from the political points of view.

The clash between the two conceptions was visible in practically every stage of the process. For instance, the two legal documents which define the creation of a

scientific committee, the range of its competences and its composition clearly display a contrast between the Government's restrictive view and the Parliament's acceptance of the broadening of the scientific and technical agonistic space itself. The constitution of a Medical Workgroup (GTM) as an outcome of the mobilization of the opponents to the Government's plans is a clear concession to a broader vision of the range of the forms of knowledge and scientific disciplines involved in dealing with the problems associated with waste management and which were not considered in the earlier assessments of the impacts of co-incineration.

But the incompatibility of the two perspectives is most visible when it comes to the legitimacy of citizen mobilization, of the instruments used by them (such as the petition to Parliament) and to the inextricability of the political and the scientific-technical. The clash between Program and Anti-program took place, to a large extent, over contradictory dynamics of inclusion and exclusion, over the definition of what was *internal* and what was *external* to the issue under debate. A significant point is that the demarcation of the two camps arose from the mobilization of heterogeneous sets of actors, without a previous agreement, within any of the camps, on the definition of the boundaries and composition of the legitimate agonistic field. Definitions were an emerging outcome of a diversity of processes and dynamics which, through their interferences, converged or articulated themselves as Program and Anti-Program.

The following section will develop some of the main features of this process of emergence and articulation.

4. Emergences and articulations: scientific controversy and political conflict

Richard Levins (1998) reminds us that both the production of explanations or causal statements on a given phenomenon and the intervention on the latter

require a definition of what is part of the phenomenon - what is internal to it - and what is outside the phenomenon. Naming the "system", its boundaries, the elements that constitute it and the dynamics linking them thus becomes a key task not only of knowledge production and technology development, but of effective intervention in the world through the mobilization of that knowledge and technology. This is a condition for assigning blame or responsibility for consequences or for claiming compensation for unwanted effects of the intervention. The removal of certain elements or effects from the "internal" space of the system means that these are being turned into "external" processes or effects and, as such, displaces the responsibility for unwanted or adverse consequences. This is particularly relevant when dealing with technological systems bound to generate adverse effects for health and environment, as is the case with waste management technologies. Hence, it will be of interest to this discussion to examine in detail the ways in which the "system" is modelled by both Program and Anti-program and the consequences of these contrasting models for the production of knowledge and the design and enactment of interventions.

From the epistemological point of view, Program and Anti-program follow tendentially opposite orientations. Rather than proposing an alternative strategy to the one designed within the Program, the Anti-program appears as a discloser of the absences and exclusions upon which the epistemic and political authority of the Program rests. These absences and exclusions include the positions of the experts who disagree with the option for co-incineration as a waste-management method, the domains of disciplinary knowledge which are not included in the Committee and the Medical Workgroup, the forms of knowledge associated with activism, such as those of environmental associations and movements or the "lay" and local

knowledge of citizens, and, finally, the forms of active citizenship based on a radical concept of democracy.

Program and Anti-program may be compared as well on the basis of their respective implications for scientific citizenship. It will be of interest to follow the way in which the very dynamics of the process encouraged the transgression of the boundary between scientific controversy and political conflict. According to Levins (1998),

a framework for solving a problem should be construed large enough to accommodate an answer; should reject the false dichotomies that fragment our understanding; should acknowledge wholeness and the inseparability of internal and external explanation; should include history; and should be self-consciously partisan (Levins, 1998: 582).

How do Program and Anti-program perform under this set of criteria?

Both are "construed large enough to accommodate an answer". But the questions and the answers are different. The Program rests upon a narrow definition of the problem, which is reduced to an assessment of the risks of co-incineration, as compared to those of incineration. It invokes a legitimacy, which is taken for granted, conferred upon it by a Government emerging from representative, democratic institutions and by the appropriate scientific-technical credentials of experts, covering the areas of knowledge assumed to be relevant in dealing with the problem. The Anti-program, in contrast, emerges from a set of diverse initiatives which, at different scales (local, national, European), articulate the institutions of representative democracy with different versions of radical or participatory democracy. It should be noticed that throughout the process we find no attempts at creating institutionalized spaces of democratic debate and

deliberation involving citizens. Public audiences at Environmental Impact Assessments, which could have provided a sort of embryonic form for these spaces, were never up to the task of providing room for "dissident" scientists and experts as well as citizens and their movements and organizations to voice their opinions. For all practical purposes, the Government denied legitimacy to the organization of public meetings and to the International Forum organized by the opposition movement, thus refusing to acknowledge that they were relevant forms of giving voice to the concerns and proposals of citizens.

The Anti-program raises broader questions than the ones driving the Program, such as the definition of relevant forms of knowledge, the range of available alternative responses to the problem of hazardous waste, the integration of these responses into a strategy for dealing with the latter and the impact of the different alternatives on environment and health.

As would be expected, the answers to the questions, too, are different.

Whereas the program defined co-incineration as an innocuous, environment-friendly procedure, the anti-program placed it within a hierarchy of procedures where it performed poorly compared to other options, such as reduction of waste production, reuse, regeneration and recycling.

The program rested upon dichotomies such as fact/value, science/politics or expert/lay. The ultimate authority of the designated experts and the legitimacy of the government to implement co-incineration were conditional on sustaining these dichotomies and thus delegitimizing attempts at bringing both scientific dissent and political opposition back into the process. The anti-program opposed these dichotomies and tried to strengthen the attachments of science, expertise and

politics. The process was thus understood as an inextricable web of scientific and political controversy.

The CCI and government tried to define "proper" decision-making as based on purely "internal", scientific evidence as produced by an "independent" group of experts, allegedly insulated from political pressure or from "irrational" opposition to an essentially benign procedure. Opponents, in turn, refused the internal/external distinction and its corollaries. They denounced the composition of the Committee, questioned its independence and the absence of dissenting voices, uncovered the links between industrial interests and government policy and asserted the need for strong attachments between scientific counter-expertise and citizen initiatives.

The program defined the problem in narrow spatial and temporal terms, starting and finishing with the assessment of co-incineration and of its siting. Experiences contradicting information provided by industry on the process in other countries was ignored or dismissed. The previous history of industrial waste and its management was reduced to a problem requiring immediate and urgent response. As for Souselas, the previous experience, over 25 years, of living with the environmental and health consequences of the activity of a cement plant was thought to be irrelevant. Co-incineration would result, through its filtering devices, in a net improvement of local environmental conditions. For the anti-program, the history of the failures of the Portuguese government in carrying out a reliable survey of industrial waste and in defining a strategy and implementing measures for the reduction and environment-friendly treatment of industrial waste was a crucial indicator of why the government should not be trusted. The selective use of evidence and of experiences with co-incineration and its effects on health and environment by the CCI, coupled with the lack of empirical information on the

environmental conditions in Souselas and on the health status of its population also undermined the credibility of the Commission. The local history of Souselas and of how the presence of the cement plant over a period of 25 years affected its population and environment was another aspect which was simply ignored by government and CCI, but which proved to be crucial for local residents and for opponents more generally.

Finally, whereas neutrality, independence and scientific disinterestedness were repeatedly invoked by both CCI and government as the basis for decision-making and as a way of legitimating their own agendas, opponents were openly partisan, in so far as they insisted on the need to promote policies favouring the protection of the environment and public health, even if that meant having to go against powerful industrial interests or even government policies.

5. Discussion

The process dealt with in this case-study may be described in summary as the emergence and recurrent reordering of an agonistic space involving actors clustered around a Program and an Anti-program. The Program has in the Government its main actor and is based on the enrolment of scientists and the attempt at reducing the set of legitimate participants in the broader agonistic space to a core set of scientists, as well as narrowing the definition of the problem so as to frame it as a techno-scientific issue. There were two sides to this performance of boundary work. First, any "non-scientific" arguments were declared illegitimate, as decisions on how the government should act would allegedly follow from "impartial" scientific advice; secondly, all dissenting voices within science who were critical of the option of co-incineration were simply dismissed either as politically motivated or lacking the scientific authority of the members of the CCI.

In fact, among these dissenting voices were some of the best known experts in the fields relevant to the assessment of co-incineration, including some who had actually conducted studies of the process. The authority bestowed on the government to nominate the members of the Commission and to reduce the scope of the latter's work to the assessment of co-incineration – with no consideration of other alternatives for dealing with hazardous industrial waste or proposals for an integrated strategy to address the problem – ensured that the latter would speak with one voice, and that their conclusions would support the decision already taken by government, stressing the "there is no viable alternative argument" in favour of co-incineration.

The Anti-program in turn, attempted to bring together a heterogeneous range of actors opposing the government's decision, trying to redefine both a broader, generalised agonistic set and a more pluralistic core set, based on an equally broader framing of the problem and on the recognition of uncertainties and controversies among scientists and experts and of the inextricable links of the scientific and the political (Michael, 1996).

Whereas the program relies on the taken-for-grantedness of the legitimacy of a government arising from representative institutions and of "properly" credentialed experts covering the range of areas of knowledge identified as relevant to deal with the problem, the anti-program emerged from a number of different initiatives which articulated work within the institutions of representative democracy with several versions of contentious politics and of radical democracy. A significant absence in this process is that of institutionalised spaces for democratic deliberation by citizens which would produce recommendations concerning the process. A possible candidate for that role, the public hearings of environmental impact assessments, were far from being responsive to the need to

give more voice to dissenting scientists and experts and to the citizens and their organizations and movements. The organization of public meetings and fora was part of a set of initiatives which fall under the umbrella of radical democracy or contentious politics, but were accorded no legitimacy by the government as genuine settings for the expression of public concern.

Let us have a brief look, finally, at the forms of science and technology governance displayed in this case, using the framework proposed by Hagendijk and Kallerud (2003).

A discretionary form of governance is clearly identifiable in this case, and its main protagonist is the Government. This is a more general feature of governance in Portuguese society and, as such, it is quite familiar to those who have studied other areas of policy-making. Interaction with other actors or with the "public" is usually absent, or it is present only to the extent that there is protest and mobilization by other actors, forcing Government to acknowledge the existence of divergent or dissenting views. A slight variant of this approach involves a partial articulation with the corporatist mode. This is based on the selective interaction with actors defined by Government as legitimate interlocutors in specific policy fields. These actors may include environmental associations, trade unions, professional associations, agriculturalists' associations, parents' associations or business associations, among others. Whereas some of these are genuine representatives of stakeholders, many of them, particularly at their origin, were actually selected by the Government to act as privileged interlocutors from different areas of civil society. This corresponds to what Santos (1994) called "secondary civil society" and "intimate civil society". The capacity of these stakeholders to speak for their constituencies does not depend on the actual capacity of the latter to mobilize in support of their claims, but rather on their specific acknowledgement by

Government as "social partners". In the case described here, the role of this quasi-corporate approach was close to irrelevant, but it has proved to be important in other situations, particularly in some areas of economic, environmental and educational policy. A peculiarity of this case is the way in which, having been put under pressure by its opponents, the Government resorted to "independent" scientific advice by an ad hoc Committee to legitimize its decisions. This initiative, however, stayed well within the bounds of the discretionary mode.

The emergent collective actors associated with the Anti-program have promoted a different conception of governance, closer to the *agonistic* mode. The confrontational dynamics of the Anti-program was a means of breaking through the discretionary approach of Government. The success of this strategy was considerable. Its strategy was to open up the black box of "official", "independent" expertise by resorting to counter-experts and to push towards the transgression of the boundary of science and politics. The successive concessions of the Government to the demands and criticisms of the opponents and the ultimate defeat of co-incineration as the favourite process for managing hazardous industrial waste are clear signs that this approach is capable of success under favourable circumstances, such as the convergence of collective action with electoral politics.

An interesting question raised by this case is that of the conditions under which deliberative modes of governance can be enacted. It was clearly the case, here, that the credibility of any deliberative space or initiative depended upon two conditions: being acknowledged as a legitimate instance of debate by Government and having some real influence on decision-making. Neither of these two conditions being present, and considering the quasi-irrelevance of the only existing space endowed with some legitimacy as a potential space for deliberation, the

public audiences of Environmental Impact Assessments, the whole process started as an instance of resistance to discretionary decision-making, evolving into a struggle for the definition of a legitimate agonistic space.

A final word is in order about the educational and market modes of S&T governance: both seem to be absent from this particular episode. More generally, it might be hypothesized that educational modes of governance are more common in fields associated with policy for science, rather than science for policy. Market governance, in turn, seems to be of very little relevance in Portugal at this point.

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