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European Agencies and Global Governance

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ABSTRACT

This paper asks how environmental agencies manage to learn and adapt to policy challenges in a global context. It investigates the evolution of three environmental agencies (the European Environment Agency, the England and Wales Environment Agency and the United State Environmental Protection Agency). The paper examines how the agencies seek to influence environmental policy on domestic, regional and global levels. The paper examines the role of agencies and bureaucracies more generally, interrogating some of the assumptions made in the bureaucracy literature, particularly principal agent models. The paper suggests that a greater focus on different multi-level contexts that the three agencies face may create other possible dynamics, including organisational and policy learning.

Introduction

Environmental policy creates global and local governance demands on any agency seeking to cope with the scientific uncertainty, inter-linked issues and diverse societal concerns (climate change, the focus of this Transatlantic workshop encapsulates all of these. This difficult reality is further heightened by the equally complex nature of the European Union (EU) and United States (US) policy-making processes (Weale, 1996). This paper disaggregates the EU and US political systems, recognizing that an agency focus captures only one of the many potential policy fora for environmental learning in these complex multi-level systems. The paper takes a meso level approach,

focusing on three environmental agencies and their historical evolutions: the European Environment Agency (EEA), the Environment Agency for England and Wales (EA), and the United States Environmental Protection Agency (USEPA). The USEPA is one of the oldest and arguably most powerful environmental agencies whilst the EA is one of the strongest EU member state agencies. In a strong contrast, the EU regional level agency is the relatively small network-focused EEA. The paper formulates some theoretical propositions based on the bureaucracy and learning literatures. It asks: what are the key conditions that shape the relationships between the agencies and the political masters and constituencies; and which of these conditions can help trigger agency innovation and change, particularly in the area of climate change?

The next section formulates some theoretical propositions for bureaucracies. The third, fourth and fifth sections investigate the origins of the USEPA, EEA and the EA respectively in chronological order. The histories pay particular attention to the founding bargains creating the relationship between agency (agent) and principal(s). The sixth, seventh and eighth sections explore respectively the USEPA, EEA and EA evolutions from their origins, focusing on their organisational adaptation to their context (organisational learning) and expanded policy learning with particular interest in climate change policy.

Theoretical Overview

Agencies and Bureaucracies

Principal Agent Approaches

The principal-agency literature focuses on the core relationships between bureaucratic organisations (the agents) and the principals, the political authorities. Principal-agent

theorists conceptualised politicians as principals who anticipate the potential for bureaucratic manipulation and assert their long term control over their agency by setting various control mechanisms (McCubbins *et al.*, 1987). Bureaucrats also will have personal preferences that conflict with the principals' concerns, and the delegation of authority to agents gives the bureaucrats information advantages (McCubbins *et al.*, 1987, 246-247; Bendor, 1988, 363). To avoid expensive monitoring and sanctioning costs, the principals have incentives to build mechanisms that control the bureaucratic process (the 'rules of the game'), but do not require specifying or even knowing the detailed policy outcomes that bureaucrats pursue (Calvert *et al.*, 1989, 598-599). Agency discretion happens only when the agency manages to choose a policy that differs from the principals' expectations when establishing the procedures (Calvert, McCubbins and Weingast, 1989, 604-607). This approach expects agency innovation to only happen rarely and at a marginal level; external changes in the environment are more likely to change things.

Rationalist Path Dependent Approaches

Moe (1984, 773) offered a structural perspective in which the dominant advocacy coalition made up of government and its associated constituency seeks to build administrative structures that insulate their achievements from politics; the opposing coalitions are geared to protecting their voice in the structural design of bureaucracies and will seek to impose structures that subvert effective performance and politicise agency decisions (Moe, 1989, 273-277). The agency's characteristics are the product of strategic design on part of politicians and all those affected interests. Since there is no singularity of interests, the design of the personnel decisions, administrative goals reflect a much more chaotic discussion than predicted by the principal agent approach. In this arena, no one succeeds in achieving their goals for the agency

design: opposing coalitions seek to impose structures that inhibit agency performance and enhance external control while the coalition in power defends the agency and even counter-attacks with their own structures (Moe, 1989, 281-285). The structural choices of the creation period continue to endure and dominate over future incremental changes; agencies are likely to have the discretion for policy innovation but the overall impact is likely to be static.

Historical Path Dependent Approaches

March and Olsen (1998, 948) define 'institution' as 'a relatively stable collection of practices and rules defining appropriate behaviour for specific groups of actors in specific situations'. Institutions such as environment agencies are generally slow to change and tend to change in an incremental fashion that reflects the enshrined norms and rules. The difficulty of getting new policy ideas through the EU system with its multiple veto points has been discussed at length elsewhere, but the same holds true for the US system (Weale, 1996). Institutional analysis emphasises how structures persist over time and resist rapid, non-incremental change.

Nevertheless, institutional change can be more regular and gradual yet have substantial impact over time. Streeck and Thelen (2005, 18-31) suggest five potential mechanisms. The first (*displacement*, see pages 19-22) involves the increasing salience of a subordinate institutional mechanism and ideas relative to the dominant institutional framework. These institutional and ideational alternatives end up displacing the current choices as growing numbers of actors defect to these previously unacceptable practices. *Layering* (22-24) follows from having additional elements added to an existing institutional structure: although they might not appear to be fundamental changes at the time of adoption, over time these elements may grow at a more significant rate and absorb more resources than the more traditional elements.

Drift (24-26) encapsulates what happens when an institution is allowed to erode and change due to deliberate neglect. The institutional rules and norms remain but the context in which they operate has changed. *Conversion* (26-29) involves active redirection and redefinition (by new governments or coalitions, for example) of the institution towards new goals and purposes. Finally institutions may suffer *exhaustion* (pages 29-30) where an institution is forced to change because, for example, its own activities have undermined its function or it finds itself over-extended. One or perhaps even more of these patterns may come into play in examining how environmental agencies seek to adapt to their environment, and shape environmental policy. Accordingly, this perspective would expect agency change to be rarer but it may be possible without agency learning.

Entrepreneurship and Learning

Waterman, Rouse, and Wright (2004, 24-46) went further than Moe to expand the possibilities for principal-agent interaction, asking what happens when one relaxes both fundamental assumptions of the public choice approach (i.e. that conflicts between goals are inevitable and that agents will tend to have more information than principals). They mapped out different possibilities for the array of advocacy coalitions in two tables, which have been consolidated into Table One below.

Table One: Adapted from Waterman, Rouse, and Wright, 2004, 25.

Goal Conflict Versus Goal Consensus	Agent's Comparative Level of Information	Principal's Comparative Level of Information	Scenario
Goal Conflict	Little	Little	1. Bumper-Sticker Politics
Goal Conflict	Much	Little	2. Classic Principal-Agent Model
Goal Conflict	Much	Much	3. Advocacy Coalition

Goal Conflict	Little	Much	4. Patronage System
Goal Consensus	Little	Little	5. Theocracy
Goal Consensus	Much	Little	6. Politics versus Administration
Goal Consensus	Much	Much	7. Policy Subsystem
Goal Consensus	Little	Much	8. Plato's Republic

Table One illustrates dramatically how the Principal-Agent model, the second scenario, is only one possible relationship (Waterman, Rouse, and Wright, 2004, 24-31). This is not to discount the importance of this scenario: it is a frequent one and raises the most challenges for maintaining policy control over bureaucracy. Taking the other scenarios— scenario one suggests that there may be certain issues where knowledge for both agents and principals are discounted, such as the argument about whether the Judeo-Christian heritage should be incorporated in an EU Constitution; in such cases, the bureaucracy moves back into the background as it is no more than one interest among many in the discussion. In contrast, the advocacy coalition outcome illustrates the case where the particular agency is allied with a supporting coalition that shares its information and is opposed by another coalition that contests its ideas and values. The fourth scenario highlights the possibility that the principals have the key information advantage and use it to strip the bureaucracy of all but a menial task role.

When we move towards scenarios where consensus operates between government and bureaucracy, the fifth scenario again suggests the marginalisation of the bureaucracy as they largely become supporters for whatever ideas the politicians are willing to promote. Where information asymmetry favours the agent, we see the classic depiction of bureaucracy as becoming technocrats whose expertise gives them considerable autonomy as long as they produce results. The policy subsystem

suggests the case where all the actors share information and there is a consensus on the goals, leading to a stable network or triangle built on trust and consultation. The final scenario best fits political systems with little administrative capacity.

The implications of these scenarios are that agency discretion is heavily constrained in scenarios 1, 4, 5, and 8, and unproblematic in scenarios 5, 6, 7, and 8. Bureaucratic control is most at issue in the principal agent and advocacy scenarios. These scenarios encompass the possibility that there will be competing principals as well as agencies; the basic reality is that neither the principals nor the agents are likely to be unitary in outlook; this reality inherently underlines the importance of coalitions. Agencies have incentives to ally themselves with principals who share their goals and policy outlook. At the same time, both agencies and other interest groups have a strong incentive to share information to likely supporting coalitions, and thus the situation of information asymmetry decreases. This has led Waterman, Rouse, and Wright (2004, 37-42) to conclude that information and learning is a core dynamic that transforms the bureaucracy- principal relationship: both sets of actors are learning over time about policy, politics and their own organisations.

The scenarios suggest a coalitional dynamic that agencies and their leadership must learn. Carpenter (2001, 14-35, 353-367) has explored how bureaucracy can build autonomy and establishes direct links to the citizens and the new associations.

Entrepreneurship is crucial and differentiates this from functionalist accounts (e.g. Majone 1997). Bureaucracies need stable legitimacy for themselves, and not just for the policies, and accordingly they push policy innovation (Carpenter, 2001, 14-18).

Genuine autonomy exists when agencies can make the decisive first moves towards a new policy, establishing an agenda or the most popular alternative, which become too costly for politicians and organised interests to ignore. Agencies can alter the

preferences of the principals (the public, organised interests, and politicians). The principals and the allied interest groups/constituencies may articulate clear goals for the agency to pursue and delegate accordingly. Agencies operating with discretion may exert a process of bureaucratic entrepreneurship (Carpenter 2001, 30-31). Here the agency leadership experiments with new programs and introduces innovations to existing programmes while gradually convincing the diverse political actors and coalitions to value the new innovation and the agencies themselves. Agency actors sustain this preference shift by using recognised legitimacy in the policy area, by building superior ties to the public and/or media, or by establishing reputations for impartiality or the pursuit of public good. Agencies operating in the classic principal agency scenario will seek to develop advocacy coalition scenarios or even more secure policy subsystem and technocracy relationships where there is stability, recognition and legitimacy for the agency role.

Bennett and Howlett (1992, 278-288) provided a useful synthesis of the policy learning literature by asking this series of questions: who learns, what is learned and to what effect? The first type of learning (which this paper changes from ‘government learning’ to ‘organisational learning’) focuses on the understanding the administrative process with the aim of organisational change. By contrast, ‘lesson drawing’, a term taken from Rose, focuses on how programmes change by learning about new instruments and tools. An oversimplified way of seeing the distinction is to see organisational learning as targeting internal and external actors involved in the agency policy process while lesson drawing focuses on policy objectives. Finally social learning encompasses the learning process where new world views and outlooks are learned that lead to radical shifts in policy paradigms. Differentiating lesson drawing from social learning in this way allows one to isolate the fact that it is

possible to adopt or borrow new instruments without changing fundamental values or outlooks (Page, 2003). This paper distinguishes between different kinds of learning in Table Two and drops the question of who is learning. The three lower categories in Table Two emphasise the contingent possibilities of all of these processes: there must be both a cognitive change of understanding on the part of the actors, as well as a behavioural adaptation to this new knowledge.

Table 2 Learning Modes (from Zito and Schout, 2009)

Learning types	Learns What	To What Effect
Organisational Learning	Process-related behaviour and strategy	Organisational Change and Political Positioning
Lesson Drawing	Instruments	Programme Change
Social Learning	Ideas, worldviews	Core Paradigm, Value Shift
Partial or Flawed Learning	Superstitious learning	Connections between actions and outcomes are mis-specified
Blocked Learning	Cognitive change occurs but structures, interests and current worldviews block behavioural change	Learning remains at individual or group level, and is not embedded into organisation and network routines
No learning	No change in cognition and behaviour	Actors in process are satisfied with status quo

This paper assumes that agency actors see themselves as seeking to fulfil aims and to set evolving aims. Discretion and even autonomy are worthwhile aspirations for pursuing those objectives. Agencies are seeking to expand resources, including knowledge, to fulfil their goals. This may involve all three types of learning that are the focus above. Agencies need to learn how to build alliances with others, or to convert the principals to the agency's preferred consensus. Agencies also need to better understand their tasks in terms of wider understandings as well as instruments. Table Three outlines some of the possibilities for agency learning and coalition-building.

Table Three: Learning Strategies (from Zito, 2009)

Dimensions of Agency Activity	Maintain/Safeguard Arena	Expand Political Arena
Innovation is Stable	(A) Policy subsystem (Iron Triangle-Policy Community); classic Bureaucracy versus Politics dichotomy; or classic Principal-Agent	(B) Political Engagement and Advocacy Coalition Building on Entrenched ideas
Innovation is Pushed	(C) Internal coalitional learning and organisational learning	(D) Expansive Advocacy Coalition – Entrepreneurial learning

Situation A is more likely to involve incremental adaptation or lesson drawing that does not modify the organisational strategy and worldview. There are some tactical adjustments and increased peripheral knowledge in order to maintain the agency position in relation to the inner core principals and the constituencies. Partial or no learning (either blocked by particular actors or simply no impulse within the agency) is also possible in this scenario. Both the principal-agent and the Moe approaches would expect this scenario to dominate future agency performance. Innovation is unlikely and only at a very marginal level. Situation B relates a similar pattern although incremental adjustments to political strategy are more likely. This scenario occurs in changing political circumstances when power is shifting (e.g. changes in government) or the actor coalitions are more fluid.

Situation C suggests substantial coalition innovation through endogenous processes although exogenous pressures also may appear. Organisational changes or lesson drawing may occur that seek to improve agency performance. Situation D encapsulates Carpenter's entrepreneurial learning concept where agencies actively push innovation and seek a wider actor coalition to embrace this knowledge and embed it into their own routines, rules and behavioural norms.

Comparing Environmental Agencies

The USEPA Origins

Of the three agencies in this paper, the USEPA history is the most well known and therefore will only be mentioned briefly. President Nixon's push for an agency needs to be seen in the context of a greater environmental awareness in the 1960s and early 1970s. This led both the Democratic and Republican parties to try and balance their traditional voter bases (e.g. trade unions, employers) with new concerns about the environment. In this new, transitional and therefore somewhat ambiguous context, Nixon pushed for the landmark National Environmental Protection Act and started the process of building institutions to support this agenda. In 1969, Nixon created a cabinet committee, the Environmental Quality Council, which issued a preliminary report recommending the creation of a new Department of Environment and Natural Resources (Landy *et al.*, 1994, 22-31). This was a substantial administrative move as the Department would replace the Department of Interior, absorbing many of that Department's historical functions for the natural environment with the new regulatory brief as well as elements from other departments. However, many Cabinet Secretaries were extremely dissatisfied with this plan, and this led Nixon to instead issue an executive order creating the EPA (Landy *et al.*, 1994, 30-33).

The new EPA was thus constituted out a range of offices with varying departmental histories and outlooks. Nixon's advisory council recognised at an early stage in developing an operational plan for the agency that such diversity would create problems in the future. However, the political calculation was that the EPA needed to establish its credentials in the short term and only in the longer term work through a rationalised system based on functional lines (Landy *et al.*, 1994, 33-36). Thus the first Administrator Ruckelshaus took a wide range of enforcement actions. This

strategy, while extremely successful in promoting the agency's credibility as an environmental champion, had the consequences of putting questions of organisational development and re-organisation on the backburner (McMahon, 2006, 36-43). This short historical overview suggests most strongly the rationalist account of Moe, with its focus on coalitions of political (and bureaucratic) interests jockeying in the design of the new agency. The actual outlook of the offices amalgamated suggests strong elements of the historical/sociological approach as the different media offices often fell back on old networks and outlooks. At the same time, however, Ruckleshaus's initial strategy suggests an entrepreneurial bid to satisfy the principals in the Democratic controlled Congress and reach out to the new constituency of the environment interests. But this effort is within the paths created at the start.

The EEA Origins

On 17 January 1989, the Commission President Jacques Delors triggered the environment agency idea, calling for an environmental measurement and verification system and the establishment of a precursor to a pan-European environment agency (EP, see Brown 1995). The EC arena and the high level Commission officials more particularly had already recognised the need for high quality environmental data as a basis for policy formulation and monitoring. This has already triggered the creation in 1985 of CORINE (Co-ordinating Information on the Environment, see Bailey, 1997, 148-149). The 1988 European Council summit specifically requested better information on the state of the environment, empowering the Commission to respond (Schout, 1999, 86).

Although all member states articulated a basic support for the agency concept, Council and the EP positions quickly emerged diverged. The British (as well as the

Spanish) government suspected any agency design with regulatory and inspection, preferring the idea of a data co-ordinator. The Environment Commissioner, Ripa di Meana, the EP Environment Committee, Green MEPs and other agency supporters wanted it to have autonomous status and some regulatory power (Majone, 1997; Ladeur, 1996). Although the top Commission leadership articulated strong interest to the Agency idea, others within DG XI feared that the EEA might duplicate its own work (House of Lords, 1995, 9).

The Commission's actual proposal occurred on 21, June, 1989 (CEC, 1989). In the same year, the Environment Ministers agreed to agency establishment, but could only generate a consensus on a network governance agency (Schout, 1999). The top Commission officials accepted this perspective, arguing that any further EEA enhancement should be a future development (Brown, 1995). The EP only accepted this weakening of its initial vision with the addition of a review procedure that obliges the consultation about any revamp of agency tasks (Bailey, 1997).

A Council Regulation established the EEA and 'a European environment information and observation network' (EIONET) on 7 May 1990 (Council, 1990, 2). The Regulation set the EEA objective as providing the EC with 'objective, reliable and comparable information at European level enabling them to take requisite measures to protect the environment, to assess the results of such measures and to ensure that the public is properly informed about the state of the environment'. The Regulation granted the Agency legal autonomy but also required it to maintain close links with Community institutions and member states – although agency participation was open to non-EC members (Council, 1990, 3). Regulation Article 3 emphasised that the Agency's activities should 'avoid duplicating the existing activities of other institutions and bodies', which raised possibility of tensions with the other

environmental information gathering agencies such as EUROSTAT (House of Lords, 1995). Regulation Article 20 stipulated that the Council review after two years the situation, in consultation with the EP, and decide whether to extend the tasks of the Agency. The Council created an Agency charged with providing information and co-ordinating and supervising this information through the means of networks (Vos, 2003, 119-120).

In the EEA's creation, one set of principals, the 12 member states, managed to dominate the key decisions. At one level the EEA is fixed in a classic, limited principal-agent role with a very constrained role of co-ordinating information gathered by others and co-ordinating a network (Ladueur, 1996). Nevertheless, the differing principals' negotiating positions are reflected in some of the original regulation's ambiguities and tensions. The Regulation's wording is not clear whether the agency can directly influence policy formulation (Majone, 1997). Ambiguity also surrounds the EEA's relationship to the Commission. The Management Board's composition, including EP, Commission and the Member State representatives, also embedded the presence of the various divided principals who disagreed over the Agency's role and scope. Moe's approach better explains some of the key tensions and ambiguities with the Regulation than the other approaches. The agency received a greater scope than the most negative member states had wanted but at the same time lost the chance to have the ambitious and independent scope set out by its advocates

The EA Origins

On 8 July 1991, John Major announced his government's intent to create a combined environmental agency (Carter and Lowe, 1995, 38-39). This proposal involved a restructuring of units that had recently faced reorganisation: Her Majesty's

Inspectorate of Pollution (HMIP), the National Rivers Authority (NRA) and the Waste Regulation Authorities (or WRAs, see United Kingdom, 1990; Bell and Gray, 2002, 90; Department of Environment, 1991).

Major's announcement reflected certain political and symbolic considerations, but it also reflected some deeper conceptual or social learning shifts occurring in the UK.

There was an increasing learning process on the part of actors, such as the Royal Commission on Environmental Pollution; this learning involved the recognition that the lack of a unified administration among the various UK agencies was leading to the regulation of pollution emissions for one media simply triggering its displacement into another (Carter and Lowe, 1995, 41-43).

It also reflected the impact of Europeanisation upon UK environmental structures (Interview, national expert, 2006). The more informal, decentralised and piecemeal UK environmental approach had to confront the detailed EU regulatory stipulations (Haigh, 1986). Whilst various UK agencies, such as the NRA and HMIP, had developed European offices, these units had to grapple with the increasing details and lacked a strategic perspective on European developments (Ward, Talbot, and Lowe, 1995, 48-49). This reactive mode marginalised these agencies' involvement directly in the various EU specialist committees generating new policy and made their roles less discernible to the European partners. The agencies like the NRA lacked an explicitly defined relationship to the EU policy structure, and their UK idiosyncrasies rendered difficult the formation of relationships with European networks (Ward, Talbot, and Lowe, 1995, 49-51).

As Moe's framework would expect, the Department of the Environment (DoE) and the Ministry of Agriculture, Fisheries and Food (MAFF) started a dispute with Whitehall over policy control. At stake was the question of ministerial control over

parts of the river authority functions when the NRA lost some of these functions in its Agency transfer (Carter and Lowe, 1995, 38-47). To build a consensus, the government set a consultation process to be completed by January 1992. In 1991 the consultation paper circulated a range of options, varying in the degree of amalgamation of the principal agencies, the HMIP, NRA and WRA (Department of Environment, 1991).

The Confederation of Business Industry wanted a unified agency centred on the HMIP, with which it had excellent professional relations. Fishing, farming, riparian, amenity and rural interests all strongly backed the idea of a strong NRA.

Environmental non-governmental organisations preferred a unified agency but worried that the NRA's considerable regulatory powers would be lost in the amalgamation. The Departmental row within Whitehall continued and even extended itself to disputes concerning the overall responsibilities for coastal protection (Carter and Lowe, 1995, 48-49).

The Conservative Government opted for an Agency that only covered England and Wales and that combined fully the three core agencies. The 1995 Environment Act established the EA, which started its statutory duties on 1 April 1996 (United Kingdom, 1995). The Agency's principal aim was protecting and enhancing the environment through environmental protection and water management, ultimately contributing to the global environmental goal of sustainable development (EA Memo, undated).

The organisational amalgamation of the 3 bodies reflected the desire to retain the strengths of the separate bodies and also pleasing the constituencies associated with each agency. However, this effort created a rather incoherent administrative structure reflecting all of these concerns and creating tensions within the new organisation.

Moe's framework is even more suggestive in this EA case. The officials in each of the three bodies hoped that the EA would reflect the key organisational principles of their own agency (McMahon, 2006, 147-174). The eventual organisation fitted most closely the largest EA segment– the NRA.

Another critical organisational issue debated whether the organisation should utilise functional-media divisions or a set of themes that cross-cut and integrated the functional activities. This suggested the idea of multi-skilled teams; which fit more closely to the HMIP and its integrated pollution control approach. Accordingly the agency contained a small head office with regional managers that set regional strategies and area officials resolving local issues (EA Official Interviews, 2007). The Agency, in an effort to take a more integrated approach to regulatory tasks, also added a matrix structure organised around nine over-arching themes which required regional and area actors to work across the themes. This complex and unfamiliar approach placed additional adjustment costs on many of the new agency (McMahon, 2006, 147-174).

The USEPA's Evolution and Consequent Position for the Climate Change Challenge

In contrast to the other two agencies studied in this paper, the USEPA has had a number of decades of development and a consequent level of activity. Therefore this section only focuses on changes in the principal agent control mechanisms and examines the issue of networking and innovation of governance instruments through the case study of climate change.

The USEPA is unusual compared to the other two agencies in that the White House administration selects political appointees to head the agency and its key offices. This is a clear creation of control mechanism by the one of the principals; these appointees

are in a sense agents with a more direct link and association to the principal.

However, the agency control and impact of these officials varied widely depending on the individual. Some of the more effective USEPA administrators, such as Ruckleshaus, had developed their own independent political base and prestige (Interviews, USEPA officials, 2007-2008). In Ruckleshaus' case, this might have reflected his two separate stints as Administrators, but in most cases the political appointees bring their political leverage from their past political/policy lives (e.g. Christine Todd Whitmann).

A somewhat notorious example of the White House seeking to radically shift the direction of the agency by means of this principal-agent mechanism was the Reagan White House appointment of Anne Gorsuch as USEPA administrator as well of a number political operatives. These appointees had little Washington experience but a strong sense of ideological purpose that was seen as threatening by environmental groups. At the same time the Reagan administration sought to subordinate the agency to a number of administrative measures (Landy *et al.*, 1994, 248-250). The Reagan administration created a number of Cabinet Councils to consider policy questions in a process that marginalized the USEPA.

The Reagan administration also continued a centralisation approach used during Carter's term: namely the use of the Office of Management and Budget (OMB). The White House issues an Executive order requiring all proposed major rulemaking to be submitted to the OMB for review as well as enabling the OMB to examine all extant rules using a cost benefit analysis (Landy *et al.*, 1994, 248-250). This tool was extensively wielded by succeeding presidential administrations.

The third control mechanism was the use of the budget and budget limits. The USEPA faced the required implementation of a number of 1970s laws that reached the implementation stage, but the White House substantially contracted the budget. Between 1980 and 1982, the EPA budget declined from \$701 to \$515 million in 1972 dollars, and the number of non-Superfund positions at the agency declined 22.6 from 1981 to 1983 (Landy *et al.*, 1994, 248-250). The White House did not have it all its own way as the Democratically controlled Congress fought hard on budgetary issues and pushed to investigate the Gorsuch USEPA in a manner that contributed to her downfall.

Subsequent presidential administrations have sought to make use of these mechanisms although often for varying objectives. Vice President Gore undertook one of the key planks of the Clinton administration, the programme titled the 'Reinvention of Government' and installed a 'National Performance Review' (NPR) team in his office. The Programme, based on new public management principles, required institutions such as the USEPA to develop a strategic plan (McMahon, 2006, 91-105). The USEPA had to submit this plan to the OMB and Congress. The USEPA Plan highlighted moving away from command and control focus to more flexibility in governance mechanisms as well as more emphasis on partnerships with states and bigger emphasis on compliance assistance (Interviews, USEPA officials, 2007-2008). In the context of the new public management principles, the NPR team pushed the USEPA Administrator Browner to address its media oriented approach (which was seen as being too 'top down' and 'stove pipe' focused) and to streamline the management processes (McMahon, 2006, 91-105). While some elements of the USEPA completely reorganised themselves along this theme (e.g. Region 1), the overarching historical divisions of the USEPA remained.

The George W. Bush administration continued to use the control mechanisms of previous administrations; nevertheless, the emphasis on cost benefit analysis and the justifying of proposals tended to constrain USEPA initiatives more than they had done so previously. There was no substantial rollback of USEPA programmes, but the Bush White House imposed considerable budgetary restrictions, with the result that the USEPA did little hiring during the George W. Bush Presidency. This ironically contrasted enormously with George Bush senior's administration substantial increase in the USEPA budget as well as a respect for the strict application of environmental regulatory law, a presidential era that many USEPA officials now remember fondly. The budget cuts of the George W. Bush White House had the direct impact on forcing the USEPA office to re-prioritise what they saw as vital activities and abandon less essential items (Interviews, USEPA officials, 2007-2008). This led to a substantial re-direction of USEPA effort without a very visible national confrontation over environmental laws and protection as was seen in the Gorsuch period.

Turning to the climate change issue to see how the USEPA has dealt with its principal-agent constraints, it is first worth remembering that the USEPA had published two substantial documents on the issue in the 1989-1990 period (Landy *et al.*, 1994, 291-295). There was a tremendous examination of the science but a general conclusion that much of it was uncertain. Nevertheless, the reports did argue for stringent efforts to reduce greenhouse emissions. Nevertheless the Bush Sr. White House was unwilling to follow through with substantial mitigation agenda either at the national and international level.

The Clinton era saw a more favourable approach to climate change, but it is the USEPA relationship with the George W. Bush Presidency that illustrates many of the key principal agent dynamics. For most of this Presidency, the USEPA focus on

climate change was relatively limited. President Bush announced in 2002 the plan to reduce greenhouse gas intensity by 18 % over a decade (USEPA, 2009 23-24). The USEPA was encouraged to pursue some lesson drawing about climate change instruments, but this exploration was centred on designing and managing a number of voluntary climate efforts, as well as exploring technological solutions in areas such as transport (USEPA, 2009 23-24). Accordingly, the USEPA joined the Department of Energy to implement the ENERGY STAR programme to promote energy-efficient products and processes.

This has had to be reflected most significantly in the actions and outlook of the Headquarters Unit which is based so near to the White House. There was a clear recognition that a more interventionist USEPA program was not possible given the orientation of the Bush Presidency. Indeed a number of interviews suggested that a number of lower level managers in the EPA Headquarters were simply 'waiting' (and hoping) for Obama (Interviews, USEPA officials, 2007-2008).

However, this does not completely reflect the overall effort the USEPA has been involved with on this subject. The lower layers of the USEPA have been involved with a number of state initiatives as well as carrying out their own limited activities in this area. As will be seen below, this dynamic changed as other national institutions have come at odds with the Presidential administration.

In 2003, the governors from Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont started talks to develop a regional tradable permits scheme for emissions for power plants. In 2005 this groups of states, excepting Massachusetts and Rhode Island, signed a memorandum of understanding to create the Regional Greenhouse Gas Initiative.

Later Massachusetts, Rhode Island and Maryland joined (<http://rggi.org/about/history>,

March 2009). The program started its cap and trade system with an auction in September 2008. The geographic location of these states is important. Although a number of them had Republican governors, all of the states felt a need to tackle this issue in the absence of Presidential leadership. This left the Regional Headquarters of Region 1, covering the New England states which predominated initially in this initiative, and of Region 3 with a balancing act. The reality of the USEPA is that the more regional elements of the agency must work closely with the state governments and environmental protection agencies to ensure that the national laws and regulatory targets are met. In this context, the Region 1 leadership decided to consult closely with the governors, giving advice and making suggestions. This effort was made in a low visibility way, without a specific budget; resources within the offices were shifted from the traditional handling of issues to this climate change question. This Regional EPA effort would constitute alliance building around the climate change objective, but not active policy leadership as was being shown by the states. This effort has taken an international dimension as the same governors held discussions, again with the support of the regional EPA officials, with the Canadian provincial premiers who have put a lot of emphasis on climate change.

The Regional offices have been able to carve out their own small niches to tackle climate change even during the George W. Bush era. For example, each Region has had to implement the Safe Water Drinking Act. To fulfil the objectives of this legislation, the top managers of Region 1 actively shifted the focus of the effort to incorporate the issues of climate change, using the rationale that the potential impact on water systems due to climate change raises questions for the drinking water objectives. To some extent this responded to the thinking of the national media office, the Office of Water, which has had to address this question. While this is

technically outside the statutes, it nevertheless could be a very important issue linkage. Therefore Regional office 1 shifted some resources at the margins to address this problem and examined water studies that investigated the issue. It also has meant turning the tools at hand dealing with the water issue to the linked area of climate change, such as the monitoring of the waste water industry's energy efficiency. A similar shifting of effort and purpose occurred in energy conservation efforts.

Other regions seemed to have tackled other angles that were of greater concern. The state of California has taken a very visible line against the USEPA and the Bush executive in actually filing a lawsuit against the USEPA to force a decision about whether California could enact emission standards on cars, light trucks, and sport utility vehicles; the USEPA Administrator still denied the waiver allowing California to do so in 2008 (Young 2007; GAO, 2009).

It is important not to overstate the impact of USEPA innovation. Much of the USEPA activity was done under the policy radar screen at the national level and at the margins. The reality is that the tide towards climate change was turning in the United States during the Bush 2 White House. On the one hand, one of the other principals, the US Congress, saw several bills get developed with the idea of directly tackling climate change, creating some clear blue water between these Congressional actors and the White House. These efforts will take on added significance with the new Obama administration.

However, of more immediate importance to the USEPA was the US Supreme Court 2007 ruling against the USEPA. Here a number of petitioners, joined by the state of Massachusetts, sought to see greenhouse gas emissions as pollutants that can be regulated under the extant US law, namely the Clean Air Act (Supreme Court of the US, 2007). The USEPA responded to this Supreme Court decision by empowering

the Office of Air and Radiation to develop a rule to tackle greenhouse gasses through the mechanism of the Clear Air Act. The Office of Air and Radiation is in the process of drafting this rule (USEPA, 2008). There is a larger regulatory question of how effective and efficient it would be to try and regulate the complex issue of climate change under regulations designed for other air pollutions concerns (Interview, USEPA official, 2007). The Obama administration seems to be wrestling with the question of whether such efforts could be expanded within the Clean Air Act, or whether a new pollution act should be the central response (Cappiello, 2009). To a large extent this recent history of the USEPA does suggest that there has been some discretionary action informed by USEPA social learning and lesson drawing, but that the much more significant changes that the USEPA has witnessed have been in the changes in thinking amongst the principals, particularly the White House.

The EEA Evolution and Consequent Position for the Climate Change Challenge

Following the adoption of Regulation 1210/90, a task force within DG XI started the groundwork for the EEA while waiting for the member states to conclude the location. The first stage of the EEA development occurred from 1990 to 1995, focusing upon baseline information and assessments on individual environmental themes (IEEP and EIPA, 2003, 26; House of Lords, 1995). This preliminary effort involved further developing the CORINE data inventories. Also important was the effort to build relationships with other institutions, which tended to take the form of protocols/MoUs (Memorandums of Understanding, see House of Lords, 1995). With the Commission taskforce disbanding in 1994, a small Agency staff of six began a recruiting process that grew the Agency up to 55 staff with a budget of 18.6 million ECUs by 1999 (Caspersen, 1999, 72; House of Lords, 1995). In order to achieve its

three basic aims of networking, monitoring and reporting, the EEA followed a 5 year Multi-Annual Work Programme, focusing on specific projects. The essential EEA organisation involved a Director's Office, an administrative department, and three operation departments covering monitoring and databases, analysis and integrated management, and operational base and infrastructure, publications and information, as well as a Management Board and a Scientific Committee. Given the Agency's small size and its Regulation stipulations, the EEA embraced necessarily becoming a 'new kind of "networking bureaucracy"' (Caspersen, 1999, 72).

Given the explicit mandate to build a network system based on an extant structure, the EEA had to engage with national institutions. Within the EIONET network were the 9 European Topic Centres (ETC), which are groupings of specialist research organisations (EEA, undated). Perhaps even more important were the National Focal Points: the national institutions charged with assisting the EEA in preparing and implementing the work programme and the EIONET's development. Article 14 of the Regulation specifically instructs the EEA to co-operate actively (without duplicating effort) with other international organisations, specifically mentioning the certain bodies such as the United Nations and its specialised agencies (Council of the EC, 1990). Thus the Regulation required the EEA to have global as well as networking scope.

The first EEA change was foreordained in the original Regulation: namely a Commission report to review the Agency's performance after two years, with proposals concerning additional tasks, for the Council's consideration (Council of the EC, 1999, 1). Postponed until the EEA had been fully operational for two years, the Regulation revision process started in 1997. It had the potential to develop organisational learning and push the EEA in two contrasting directions: (a) a

mechanism for expanding EEA powers, as some actors intended the original compromise; (b) or a monitoring tool for the principals concerning performance and the constraint of those tasks. Without adequate support of clients/principals, such a review could take quite negative turn in the Council.

In actuality the resulting Regulation 933/1999 did not dramatically change the EEA's path but did add important nuances. The Revised Article 2 changes the aims 'to provide the Community and the Member States with the objective information necessary for framing and implementing sound and effective environmental policies' (Council of the EC, 1999, 2). This wording gave some scope to the understanding that the EEA was not a simple collector of databases but had an explicit policy function. The Regulation also underlined the EEA's awkward position as one of several collectors of data, specifying that the Agency utilising the data generated by Eurostat and the national statistical offices.

In the wake of this revised Regulation, the Agency became more focused on reforming (i.e. streamlining and systematising) the information system and focusing on sectoral integration and prospective analysis (IEEP and EIPA, 2003, 26). The revised Regulation continued to require an internal auditing and review process, requiring a review of the agency's performance and efficiency and further mandating a further 2003 report, to be submitted to the Principals (the Commission, Council and EP) to assess the Agency's progress concerning the 'Community's overall policy on the environment' (Article 20, Council of the EC, 1999, 2).

The consultants, Arthur Andersen, conducted the 1994-2000 evaluation of performance and efficiency, very significantly affirming the need for the Agency and EIONET. The evaluation praised the network for linking the agency to capacity-building at the national level (IEEP and EIPA, 2003, 26-27). It argued that the

Agency's work needed to fit more closely with the principal clients' needs, but that it could not serve all users and nor policy areas given extremely limited resources.

Acting as a check on the linkage of principal and agent, the review argued that the EEA's role needed to shift from providing stand alone products (such as reports) to providing services to the policy-making actors. Such a recommendation could encompass a strong element of task expansion to include influence on the policy process (Ibid). The 2003 Review (IEEP and EIPA, 2003) also was important because it led to explicit Council statement enshrining the EEA role as serving the entire EU as an independent body (EEA Actor Interview, 2007; Commission, 2003).

Another potential controlling device for the principals was the EEA Management Board, which, to some extent, acts as body representing the various principals (member state representatives, Commission officials and appointees selected by the EP) in its Board. While the Board must approve the EEA work programme and various organisational/staffing decisions, this is more a negative form of control rather than ability to manage the EEA direction. Furthermore, the Board's increasingly (with enlargement) large size exacerbates these limits. The Board does act as conduit of information and network for the EEA and its principals.

The core relationships between principal and agency are evolving. The relationship with Commission DG for Environment, the key interlocutor between the Commission and the EEA, has ambiguities given the Commission's traditional role as guardian of the treaties and the fact the EEA budget is located within the DG Environment Budget. The DG has special control over it and can make proposals. This has led to a perception among some DG officials that the EEA is taking its money and should do its bidding (EEA actor interview, 2007; IEEP and EIPA, 2003, 62-63). An effort of the EEA leadership in the 1990s to enlist the EP as a counterweight to the

Commission created further difficulties and did not stimulate the generally tepid MEP interest (EP official interview, 2007).

Since 2000, however both the Commission and the EEA have worked to build a more collaborative relationship although there are still differences in opinion about the EEA role in policy implementation and effectiveness (IEEP and EIPA, 2003, 42-42). This partly reflects a politically more discrete and sensitive EEA approach and relationships to the DG, compared to relations between senior management in the 1990s (EEA and EP official Interviews, 2007; IEEP and EIPA, 2003, 60-62). Regular interaction at both the top and lower management level has aided mutual communication and understanding (EEA Interviews, 2007).

This suggests substantial Agency organisational learning over time about discerning the boundaries of its roles (EEA Interview, 2007). A key example was the EEA commitment to the operation of an Environment Data Centre, which was idea generated by high level Commission leadership to share management of databases amongst the EEA, DG Environment, Eurostat and the Joint Research Centre; the EEA conducted an internal reorganisation to solidify its co-operation (EEA, 2006, 50). One of the core internal changes within the EEA has been a restructuring of its teams and mid-level management and increased focus on technical and management training (EEA Interview, 2007). The 2001-2004 restructuring increased mid-level management to supervise project managers and to provide more focused groups for studying issues, as well as the integration of the data across policy sectors and environmental themes (EEA, 2004, 26-28). This move was partly a signal to the principals about the EEA commitment to fundamental aims-centred data collection and to interacting with the Commission, Eurostat and other institutions.

The Commission's thinking also evolved. Its 2003 review acknowledges the importance of EEA's role and even accepts a potential extension of EEA support activities 'along the entire range of stages of the policy cycle' (Commission, 2003, 10; EEA interview, 2007).

Service to the entire Community raises the question of the relationship to other principals: the EEA has developed gradually stronger links to the Council and groups of like-minded member states (IEEP and EIPA, 2003, 42). The EEA has undertaken a various collaborative efforts, including the development of conferences and the provision of background notes. The EP Environment Committee perceives itself to be a client (principal) and has asked the Agency for a number of ad hoc reports. The Committee laid out the need for background material on Commission legislative proposals and on related member state activity. Part of this request was a conscious EP effort to boost the EEA scope to conduct a level of discrete, limited policy analysis; this effort was concretised by memoranda of understanding between the EEA and EP (EP official interview, 2007).

The role in policy has been core in the EEA evolution from simply writing reports and maintaining information integrity. In the 1990s, the Director Generals of DG Environment viewed themselves as the chief client and actor responsible for policy; the EEA's main focus should be data collection. The 1998 and 2000 budget discussions led the DG to push heavily for the EEA to downgrade lower priority tasks (IEEP and EIPA, 2003, 38-40, 61-62). Nevertheless, the EEA actors understand that the question of data and the provision of environmental information are ambiguous; data gathering is not a neutral activity. Even mere data organising raises the issues of how policy problems are perceived and how policy works (EEA Interviews, 2007). Nevertheless task expansion has occurred.

Changes in EU policy demands found in the system have supported this shift (IEEP and EIPA, 2003, 28-29). Thus the Cardiff process and the Sixth Action programme generated particular policy requests (by the clients/principals) that the Agency could respond to with specific information. Since 1998, the EEA has worked with the Commission and Council Presidency in actual policy development, in such areas as the Greenhouse Gas Monitoring Mechanism; EEA staff made presentations to the informal Environment Councils (IEEP and EIPA, 2003, 32).

The EEA has exploited its role as a network agency to build closer ties with actors inside and outside the EU policy-making process. The EEA management approaches have stressed the importance of staff networking, sometimes challenging for EEA officials from highly technical backgrounds. The EEA officials carefully adhere to the original Regulation, which has the ambiguity to give limited scope for task expansion (Interviews, 2007). For the EIONET to function properly, the EEA must interact with member state officials, scientific experts, and civil society stakeholders as well as the EU institutions.

EEA officials adhere to the Regulatory requirement to engage with international organisations without duplicating effort. They engage with third countries and international institutions in a way to showcase its policy knowledge as well as ideas about networking and data collection, based on the EU experience (EEA Interviews, 2007).

Although the EEA has embedded itself in an extensive policy network and has moved towards policy assessment, this ongoing process can still meet resistance from a number of quarters. Accordingly EEA officials tend to focus on discrete and restricted aims. Nevertheless, public criticism can be swift. The EEA made two initial efforts to assess the policy effectiveness of directives (reports on packaging waste

implementation and on urban waste water treatment). The waste report encountered substantial industrial criticism (Consultant Interview, 2007). The EEA's careful response to this criticism fits with its broader approach to balance its position: to remain careful about the data, its analysis and the claims they make about it (*ENDS*, 2005a; *ENDS*, 2005b).

In comparison to these developments, the EEA's focus on Climate Change takes a more traditional form, but even this suggests a certain policy engagement. The main focus is helping to monitor and assess the EU progress to achieving its agreed greenhouse gas emission policy targets. Its new strategy has a number of short-term objectives, including the creation of an Environmental Data Centre in the area of Climate change in 2009; this will contribute to the gathering of country information (EEA, 2009, 11, 19). It also seeks to provide analysis for the planning of a European low-carbon economy as well as the provide support information for the latest attempt at an international climate settlement, which meets this year in Copenhagen. The low-carbon economy analyses include the study of integrated mitigation and adaptation outlooks, as well as analysing future scenarios across a wide range of developments. Special attention is also being paid to improving and maintaining information and indicators of the climate change impacts, looking at current trends as well as hindcasting and forecasting Europe's climate at different scales (EEA, 2009, 19). From the perspective of the climate change issue, the EEA's positioning reflects its more standard relationship as an agent to its principals, providing data as well as a small amount of policy analysis to the Commission, member states and the EP.

The EA Evolution and Consequent Position for the Climate Change Challenge

Since its 1996 creation/amalgamation, much of the EA learning effort has been internal. The EA involved a complex new structure and new features (e.g. matrix structures). A number of staff from the HMIP and WRAs thought that the new organisation was essentially a 'take-over' by the NRA, forcing a considerable management adjustment on their part (McMahon, 2006, 156-157). The 1996-1998 transition also saw the lack of management consensus about the tasks and processes of the agency.

The communication and co-ordination problems and newness generated subsequently a substantial period of low morale (Interview, EA Official 2007; House of Commons Select Committee, 2000). Many EA staff complained that the move had destroyed the sense of mission that they had had (Interview, EA officials, 2007). One of the great challenges that the EA has faced was how to overcome this and build new organisational cohesion.

There is also complexity in the principals that the EA is answerable to. The EA had the Government in London as well as the relevant House of Commons and the Welsh Assembly as principals that it was answerable to.

From 2002 to the present, the EA has undergone considerable changes. People have moved around and out of the EA, and over time the tensions have eased if not completely disappeared (Interview, EA officials, 2007). The Head Office sets agency policy and defines how localities interpret legislation, but the regions conduct the direct regulation. The EA management restructured the headquarters into 3 strands: policy setting unit, the unit translating policy into detailed instructions for regions and the Science Department. The reorganisation's aim has been to ensure that a consistent policy and set of instructions trigger a consistent decision-making process at the

regional level (Interview with EA official, 2007; House of Commons Environment Committee 2006, 16-17).

Simultaneously, facing significant budget constraints and concerns about the agency priorities, Agency management changed the focus of priorities for the scientific team several times, abolishing national centres and altering the balance between priorities (recently returning to giving nearly half the level of support for the regions. This pressure on resources reflects a larger reality that the agency has had to respond to budgetary pressures. In 2007, the Agency had to implement a 5% efficiency target set by the government as well as a short-term severe spending cut being carried out by DEFRA to meet a recent overspend in the agriculture area (Interviews, EA official, consultant 2007).

National pressures are not solely budgetary: the UK government has set a premium on quantifiable targets to demonstrate agency efficiency. Currently, the Agency is considering how it could make long-term cuts in various areas. However, some areas, e.g. increased flood defences (arguably reflecting a new kind of policy problem), are ring-fenced but also an enormous drain on agency resources and effort (Interviews, EA official, consultant 2007). Such external constraints as 2007 flooding and the DEFRA budgetary crisis have disrupted EA planning.

Within the EA one can discern an instrumental learning that has some social learning elements: there has been a major rethink of how the agency regulates industry. This is most concretely demonstrated by the modernising regulation initiative, which existed within the Agency even before becoming a priority of the current government.

This is partly recognition that the management of regulation must be done to maximise efficiency, given the kind of constant resource constraints mentioned above (DEFRA 2003, 12-16; House of Commons Environment Committee 2006, 13-15).

There is some evidence of the EA leadership and representatives working hard to shape both international and regional networking and thinking. The recent EA Chief Executives have given considerable attention to the Networks of the Heads of Protection Agencies; arguably the EA was one of the primary leaders. The network discusses various issues, including substantial exchanges concerning how agency leaders conduct both political and policy strategy with respect to their respective contexts (Interview EEA actor, 2007). The Agency has helped drive some of the stances of the group, including the stance of the 2006 Prague meeting on regulation's positive impact. With DEFRA the EA is also very active in the Implementation and Enforcement of Environmental Law (IMPEL) network and the EEA networking activities. The EA pushed the better regulation agenda heavily in these fora (Interview, EA officials, 2007).

The EA's EU and International Relations office undertakes a number of networking projects around the world. Networking on a multilateral and bilateral process is a clear priority to extend the scope of the EA impact. One must avoid overstatement as the relatively small staff and budget devote considerable focus to large national priorities (e.g. flooding, waste management *etc.*) (Interview EA Official, 2007).

The recognition that the EA is a competent authority for implementing EU regulations necessitated Agency involvement in the discussion of new EU measures. However the policy community recognised by the end of 2000 that the EA involvement varied significantly depending on the policy area and, on the whole been relatively reactive and less strategic in the past (Consultant interview, 2007). Nevertheless, over time the Commission has learned to listen to the Agency and recognise that it has a significant voice distinct from the government (Interviews, Consultant and EA officials, 2007).

This separateness from the principal, the UK government, has gained recognition internationally. The Agency has taken an evidence-based approach to its argumentation that the Commission finds useful; the EA has also pushed the better regulation agenda here (Interview, EA officials, 2007). The EA influenced the EU process formulated, for example, the general structure and specific (e.g. the groundwater provisions of the Water Framework Directive - Interview, EA official, 2007). Similarly, the EA has helped promote the UK position of pushing risk-based calculations in the formulating environmental management, such as the Contaminated Land Directive (Interview, EA official, 2007). Although the EA has an EU strategy as well as Concordat of Understanding to undertake various roles at the EU level; however, its engagement with the Commission on policy issues is prescribed (Interview, EA official, 2007; House of Commons Environment Committee 2006, 29). DEFRA is careful of its policy-making and EU representative role; it takes Agency people to support its Council negotiations, but the Agency would not solely represent the UK. The EA also must maintain the Ministerial (the principal) line (Interview, EA officials, 2007). In its care over its role, DEFRA makes much of the effort to network with both the Commission and other EU institutions such as the EEA. In some sense the EA has to be mindful that its efforts of networking do not compete with DEFRA.

In this context, the EA approach to climate change has a striking element of a balancing act. There was some debate about whether the EA had responsibility for climate change policy beyond the fact that it has tremendous responsibility for climate change adoption, in the form of flood control. The main EA focus is on enforcement but it has increasingly seen its role as champion for environment (Interviews, EA

officials, 2007). However, the lack of a remit to engage with energy and transport sectors sets natural constraints on the EA engagement on climate change.

Turning to some of its traditional strengths, there is nevertheless less scope for the EA role in modelling of climate change since there is a very advanced and healthy activity in other institutes within the UK. But the EA does have the scope to be involved in assessing how the changing climate will work. One of the key strengths of the EA is its advanced integrated catchment strategy, which allows officials to obtain data on rainfall and temperature. Therefore the EA focus is less to deal with mitigation issues than the monitoring and adaptation roles while the mitigation fights occur at the EU and UK ministerial levels.

The EA balancing act, applicable to its general situation and its role in climate change can be neatly summarised in looking at budget resources. On the one hand, the EA role in the UK policy adaptation towards climate change is fundamental. A central part of the EA budget, and a ring-fenced part of the budget, deals with flood control, identified as being a consequence of greater uncertainties caused by the changing water patterns. There has been more promise of UK money to deal with flood risk. Indeed there was some Agency concern in the fact that government gave some consideration to whether a stand alone flood agency would be more suited to dealing with the future flooding challenge; however the government review covering flood policy did not run with this idea (Interview, EA officials, 2007). This possibility seems to have moved off the agenda, but it suggests the general insecurity of context that the agency faces.

This is much truer of the wider agency situation, where substantial cuts are being planned; these are affecting both the policy sectors as well as the science wings of the Agency, many of which deal with activities with linkages to climate policy and

climate adaptation. In the 2008 restructuring of the EA, climate change was preserved as a separate programme (Interview, EA official, 2007). More than one official interviewed for this project has suggested a trend across the policy offices to try and incorporate climate change in their descriptions of the projects they are hoping to get funded (Interviews, EA officials, 2007). Various efforts were making strenuous efforts to link current projects to this new interest. In terms of the EA strategic documents, the EA has pronounced the need for increasing the work on adaptation, planning to have Adaption Programme in place by April 2010, which would be incorporated into the agency's next Corporate Strategy (EA, March 2009).

The network links with the Commission did help the EA to convince the Commission to accept the UK approach to flood risk management. Here the EA worked closely with DEFRA. EA has large investment in mapping flood risks, but the Commission proposed a flood risk proposal that was substantially different from the UK one. The EA representatives managed to explain what the UK was doing and to persuade the Commission to tweak its draft to allow the EA to keep its system in place.

Conclusions

The comparison of three very different agencies is to some extent limited by the fact that the USEPA involves a cabinet level leadership, and that both it and the EA are powerful regulatory bodies. In contrast the EEA is a small agency managing a large network. It is problematic to overemphasise the changes in the EEA: the overall EEA impact on the environment, compared to the other two agencies, is quite small.

Nevertheless, interesting comparisons abound. All three agencies started as political ideas capturing the environmental spirit of the particular context. These ideas were very thoroughly negotiated and transformed in a way suggestive of Moe's depiction

of the structural choices and negotiations that occur at the start of an agency's history. In all three cases, coalitions of actors arrayed themselves to give the agency more or less scope, often due to an institutionalist desire not to radically transform existing bodies and networking relationships. The consequence of these discussions was that the consensus could only establish an environment agency burdened with a weight of diverging responsibilities and expectations but also a set of problematic paths.

The subsequent histories warn against a too straightforward presentation of a principal agent relationship. They also suggest strong restraining conditions for any potential entrepreneurship and learning. With the widest regulatory scope, the USEPA has had to act within a number of overarching constraints set by the principals. In recent decades, this was not simply a case of having political appointees in charge of each major unit. The Executive has asserted control through the mechanism of the OMB and the process of approval for initiatives as well as through budgetary allowances. To some extent, however, this has been mitigated by the reality of multiple principals, particularly Congress as well as multiple constituencies. The multi-level nature of the USEPA also increases the scope for discretion at the more local level.

The EEA has far less regulatory scope and is much more marginal in terms of policy impact. Nevertheless, the reality of the multiple principals has created opportunities for growth; at the same time the EEA must follow a careful balancing act as it faces not only multiple principals but other competing agents (a key one being the Commission whether the staff also see themselves as principals over the EEA). This ambiguous sense of principal versus competing agent also strikes a chord in the EA history where DEFRA has been strong in protecting its prerogatives.

In terms of learning approaches, the agency histories suggest some organisational learning. Organisation learning suggests that agency officials will learn to adapt to political and organisational contexts. Such learning over the entire agency is much clearer in the EA and EEA cases. Both agencies underwent substantial management and organisational changes that reflect agency adjustment to internal developments and external pressures. Simultaneously both agencies have invested heavily in network and building relationships with the principals that they are most heavily engaged with. The EEA has advanced farther in this task expansion - in part because it had the greatest distance to travel: its growing presence in policy analysis compares starkly with the EA's large, inherited regulatory responsibility. Inherent in this organisational learning was an increased appreciation of the role of networks and information which indicates an instrumental learning or lesson drawing. By contrast, the massive, multi-level size of the USEPA suggests that localised learning might have happened but it harder to identify systematically beyond the individual offices. There is some evidence for social learning being generated by the agencies in isolated cases, but it is less clear how systematic across each agency such learning is. On the issue of climate change, it seems more a case that the social learning as occurred at the EU, UK and US levels in the respective executive bodies, and the agencies have responded accordingly. The illustration of the EA pushing hard for new understandings of making regulations more efficient, which involves some re-thinking of policy values and principles, suggests that a social learning track, which will then inform instrument learning (lesson drawing).

Also requiring further systematic study across various policy issues is the question of whether the agency relationships with their principals reflect either the classical principal agency or some other scenario. In all three cases, the neat principal-agent

relationships are challenged at the very moment of institutional design, strongly supporting Moe's argument. However it is less certain that Moe's long-term pessimism is merited in these cases.

Efforts by key principals to monitor and control agency behaviour are in evidence. In the USEPA, the major aspects of climate change policy was clearly defined by the positions taken in the principals, particularly the Presidency; it is only when the US executive loses the Supreme Court case that the shift to greater regulatory intervention occurred. The evolution of the USEPA relationship with its principals suggests that the OMB has increasingly been wielded to maintain control, but the changes depend more on the principals and the actions they pursue.

In the EEA's case there are periodical EEA reviews, the Management Board, and the founding Regulation itself. In the EA case, DEFRA controlled the policy decisions, as well as the EA budget and access to the EU. Both of these agencies have shown a concerted effort to improve their internal organisation but also to reach out to their specific principals as well as other actors through networking. This suggests that some expansive coalition building is altering but perhaps not yet transforming the principal-agent relations in both cases. However, the relative newness of these organisations (1989 and 1996) suggests some scope for the future.

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