The Bureaucratic Imperative:
Esprit and the Making of British Foreign Policy (1982-1992)

Marjorie Anne Ringrose

Thesis Submitted for the PhD Degree in International Relations

The London School of Economics and Political Science
The University of London

September 1994

ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

Abstract

This thesis examines British foreign policy-making in Esprit by applying insights from the Bureaucratic Politics perspective of foreign policy analysis. Esprit was a ten year programme that funded collaborative research and development in information technology between researchers across the European Community.

Weaknesses in the Bureaucratic Politics perspective are recognized and ways to strengthen the perspective are suggested. No *a priori* assumptions about the usefulness of the approach or of the suggested modifications are made. This thesis is as much a test of the applicability of the Bureaucratic Politics perspective to British foreign policy analysis as it is a study of British foreign policy-making itself.

While recognizing the ubiquity of competition between bureaucrats in Whitehall, traditional approaches to British foreign policy-making deny that bureaucratic competition affects British policy. Strong Ministers and a large and complex web of Whitehall interdepartmental and Cabinet coordinating committees are said to set Government-wide priorities and resolve bureaucratic conflict before it affects policy. Thus, from this point of view, the Bureaucratic Politics perspective is not applicable to Britain.

Following that argument to its logical end, is it possible that bureaucratic competition affects policy in the absence of Ministerial authority or effective Whitehall coordinating committees? This thesis argues that competition between bureaucrats for budgets and responsibilities affected British policy in Esprit when Ministers did not clearly articulate consistent objectives, when Ministers did not maintain control and supervision over the policy issue and when Whitehall coordination and control mechanisms were absent or ineffective.

When these conditions prevailed, the Bureaucratic Politics perspective, as modified, was useful in analyzing British foreign policy-making in Esprit. The question remains whether the perspective was useful because Esprit was uniquely qualified to encourage bureaucratic competition or whether other policy issues are similarly qualified and hence conducive to the Bureaucratic Politics approach.

Table of Contents

List of Tables

Acknowledgements

I offer my deepest gratitude to the numerous people who have assisted me during the course of my research. I could not possibly thank them all individually, but I am truly grateful to the eighty people who gave their valuable time during interviews. I will take this opportunity to express my appreciation to several people without whose help this thesis would not have been possible. Aside from their willingness to be interviewed several times, Mr Alan Mayo, Mr Brian Oakley, Dr John Thynne, Mr Alastair Macdonald, Mr Derek Flynne and Mr Roger Hird patiently and good heartedly endured my countless requests for more information and introductions. Mr Stephen Joseph, Mr David Talbot and Mr Stephen Roberts of the Commission of the European Community were also of great assistance, showing me through the labyrinth of DGXIII. Special thanks is due to my advisor, Professor James Mayall, whose patience and encouragement seem truly endless.

I appreciate the assistance provided by the librarians at the Commission's library in Brussels, at the DTI, at Chatam House, at the British Library of Political and Economic Science and at the SPRU library at the University of Sussex. I am thankful for the financial support provided by the LSE and the Overseas Research Studentship Committee.

To all my friends and family in Texas and the United Kingdom, I am especially grateful. I trust they know the extent to which I drew on their support during the last four years.

This work is dedicated to my family.

List of Acronyms

ABRC	Advisory Board for the Research Councils
ACARD	Advisory Council for Applied Research and Development
ACOST	Advisory Council on Science and Technology
AIP	Advanced Information Processing
ASICs	Application Specific Integrated Circuits
BRITE	Basic Research in Industrial Technologies for Europe
CAD	Computer Aided Design
CIM	Computer Integrated Manufacturing
CPRS	Central Policy Review Staff
CSA	Chief Scientific Advisor
CVD	Central Valve Development Agency
DCS	Distributed Computing System
DES	Department of Education and Science
DG	Directorate General
DoI	Department of Industry
DTI	Department of Trade and Industry
EAB	Esprit Advisory Board
EARB	Electronics and Avionics Requirements Board
EEC	European Economic Community
EC	European Community
ECU	European Currency Unit
EMC	Esprit Management Committee
ESC	Esprit Steering Committee
Esprit	European Strategic Programme for Research and Development in Information Technology
EUREKA	European Research and Coordination Agency
FAST	Forecasting and Assessment in the Field of Science and Technology
FMI	Financial Management Initiative
FRM	Financial Resources Management Division
GATT	General Agreement on Tariffs and Trade
IEATP	Information Engineering Advanced Technology Programme
IED	Information Engineering Directorate
IKBS	Intelligent Knowledge Based Systems
IPSE	Integrated Project Support Environment
IT	Information Technology

ITAB	Information Technology Advisory Board
ITAP	Information Technology Advisory Panel
ITTF	Information Technology Task Force
IT R&D	Information Technology Research and Development
JFIT	Joint Framework for Information Technology
JOERS	Joint Optoelectronics Research Scheme
LA	Electronics Applications Division
MAP	Microelectronics Applications Programme
MISP	Microelectronics Industry Support Programme
MMI	Man Machine Interface
MoD	Ministry of Defence
NEDC	National Economic Development Council
PPU	Policy Planning Unit
PREST	Policy Research in Engineering, Science and Technology
R&D	Research and Development
RACE	Research and Development in Advanced Communications Technologies in Europe
ROAME	Rationale, Objective, Appraisal, Monitoring, Evaluation
RSRE	Royal Signals and Radar Establishment
RTP	Research Technology Policy Division
SERC	Science Engineering Research Council
SMEs	Small to Medium Sized Enterprises
SOPs	Standard Operating Procedures
SPRINT	Strategic Programme for Innovation and Technology Transfer in Europe
SPRU	Science Policy Research Unit
SRC	Science Research Council
STAMG	Science and Technology Assessment Management Group
STAO	Science and Technology Assessment Office
UK	United Kingdom
US	United States of America
VHPIC	Very High Performance Integrated Circuit
VLSI	Very Large Scale Integration
5G	Fifth Generation Computing

Introduction
Chapter 1

'The policies of the State were the policies of the Government then in power.'[1]
- Mr Justice McCowan

This logic was used by Mr Justice McCowan in the 1984 trial of Mr Clive Ponting, a civil servant prosecuted under the Official Secrets Act for leaking classified information about a Ministerial decision to mislead Parliament on the sinking of the *Belgrano* during the Falklands War. Mr Ponting argued that he acted in accordance with a duty higher than his duty as a civil servant, which was to obey the orders of his Minister. Mr Ponting's higher duty was to the national interest, which was separable from the interests, or policies, of Ministers then in power. Mr Justice McCowan responded that there were no national interests above the policies set by Ministers and that Mr Ponting had no duty higher than that of obedience to his Ministers.

In the aftermath of the Falklands War, British Cabinet Ministers were accused of misleading Parliament and the public. They were also criticized for naming individual civil servants in the affair and for sending civil servants to defend themselves before a Select Committee. Ministers seemed to be abrogating three conventions of British Government: Ministers are responsible for the actions of civil servants; civil servants are anonymous, permanent and politically neutral; and Ministers are accountable to Parliament.[2]

A year later, the Government again acted contrary to the conventions of British Government. The issue this time was ownership of a British helicopter firm called Westland. A civil servant in the Department of Trade and Industry (DTI) leaked the contents of a confidential letter written by the Solicitor-General to the Secretary of State at the Ministry of Defence (MoD), Mr Michael Heseltine, to the Press Association. It is unknown whether she leaked the letter, the contents of which were damaging to Mr Heseltine, on her own accord, on instructions from her Minister at the DTI, Mr Leon Brittan, from civil servants at Number 10 or from the Prime Minister.

---

[1] Quoted in Clive Ponting, *The Right to Know: The Inside Story of the Belgrano Affair* (London: Sphere Books, 1985), p. 191.

[2] For a discussion of these conventions see, for example, Gavin Drewry and Tony Butcher, *The Civil Service Today*, Second Edition (Oxford: Basil Blackwell, 1991); Sir Robert Armstrong, *Note of Guidance on the Duties and Responsibilities of Civil Servants in Relation to Ministers*, reproduced as memorandum submitted by the Cabinet Office to the Treasury and Civil Service Committee, Session 1985-86, HC 92-II (London: HMSO, 1986), Annex A; Geoffrey Marshall, *Constitutional Conventions* (Oxford: Clarendon Press, 1984); and Sir Ivor Jennings, *The Law and the Constitution*, Fifth Edition (London: University of London Press, 1959).

The Prime Minister denied authorizing the leak. Two Ministers resigned, five civil servants (who had been implicated by the Prime Minister) were accused of breaching Whitehall rules and two civil servants, Mr Charles Powell and Sir Robert Armstrong, testified in defence of the Prime Minister before a House Select Committee.

The Westland affair turned upside down the traditional relationship between Ministers and civil servants. As Hugo Young concluded, the 'balance of power had been reversed'.[3]

> What he [Armstrong] was doing, from his unimpeachable height, was surveying the Prime Minister's behaviour and giving it the seal of official approval. Instead of the Minister being responsible for the conduct of the civil servant, here was the chief civil servant solemnly assuming responsibility for the integrity of the Prime Minister. Normally it would be the Minister up front, and the civil servant in the back room. That was what Ministerial accountability to Parliament was all about. But this time it was the civil servant who...had to face the public heat on the entire Government's behalf.[4]

Not only did the Westland affair challenge the traditional relationship between civil servants and Ministers, it also raised the specter of a Government awash in the European Community. Who was making policy and whose interests were being advanced? Answers to these seemingly intractable questions, which have plagued British foreign policy in the European Community for the past decade, could perhaps be found by asking them in the context of a single issue area. Because I had a working knowledge of information technology and because information technology is of great economic importance to the countries of the European Community, I chose to apply these questions to British policy in the European Strategic Programme for Research and Development in Information Technology (Esprit) .

Approved in 1982, Esprit was a ten year, 4.7 billion ECU programme that funded collaborative research and development in information technology between companies, universities and research establishments in the European Community. It was designed to make the European Community's information technology industry competitive with its Japanese and American rivals.

Information technology (IT) refers to the 'products and processes concerned with the collection, storing, processing and transmission of information, including voice, data and images'[5] that have resulted from the convergence of computer, microelectronics and telecommunication technology. IT is everywhere: in the home in consumer electronics such as programmable video recorders and teleshopping, in the

---

[3] Hugo Young, *One of Us* (London: Pan Books, 1990) , p. 458.
[4] *Ibid.*
[5] OECD, *Information Technology and New Growth Opportunities* (Paris: OECD, 1989), p. 11.

office in facsimile machines and electronic mail and in the factory in computer integrated manufacturing and computer aided design. None of these IT products was widely commercially available in 1976. The OECD suggests that the 'sum of these technologies constitutes a technological change which could be without precedent from the standpoint of its magnitude, its consequences and, no doubt the rapidity -- the brutality even -- of its diffusion'.[6] Whether or not IT meets this expectation, it is 'arguably the most pervasive technology of our time'.[7]

IT is a building-block of modern economies, generating economic wealth. From 1984-1988, European IT grew at a rate of 15.5 per cent; the next highest was for passenger cars at 5 per cent.[8] In 1984, IT annual production was $300 billion. It was predicted to be more than $1 trillion by the mid-1990s and the largest manufacturing industry by 1990.[9] IT has effects on employment, wages and productive capacity. In 1980, for example, the Commission estimated that nearly 50 per cent of the employed civilian work force were in 'information' and that IT manufacturing employed 5 per cent of the total Community work force, or five million people.[10]

IT is a strategic industry, linked to conceptions of economic and political security. John Zysman links global power and the ability to pursue foreign policy goals to a country's relative position in international trade and high technology.[11] William Wallace expresses a similar concern: 'the way in which technological progress became identified in the minds of political leaders, in Britain and elsewhere, with the symbols of national prestige and sovereignty has elevated technological policy, like defence, to the status of high policy and the link between technology and national security has been increasingly apparent.'[12]

IT was perceived to be the bedrock of a healthy European economy. However, the state of European Community and British IT by the early 1980s was dismal. In 1975, Europe ran a positive trade balance in IT goods and services. By 1983, that surplus had slipped into a deficit of approximately $9 billion and it was predicted to be

---

[6] OECD, *Major R&D Programmes for Information Technology* (Paris: OECD, 1989), p. 11.
[7] Erik Arnold and Ken Guy, 'Policy Options for Promoting Growth Through Information Technology' in OECD, *op. cit.*, in note 5, p. 135.
[8] Commission of the European Communities, 'The European Electronics and Information Technology Industry: State of Play, Issues at Stake and Proposals for Action', SEC (91) 565 final (Brussels: Commission of the European Communities, 3 April 1991).
[9] 'Europe's Technology Gap', *Economist*, 24 November 1983, p. 100.
[10] Commission of the European Communities, 'Proposal for a Council Decision Adopting the First European Strategic Programme for Research and Development in Information Technologies (Esprit)', Com (83) 258 final (Brussels: *Official Journal of the European Communities*, C321, 26 November 1983), p. 8.
[11] John Zysman, 'US Power, Trade and Technology', *International Affairs* (Vol. 67, No. 1, 1991), pp. 81-106.
[12] William Wallace, *The Foreign Policy Process in Britain* (London: Allen and Unwin, 1977), p. 122.

$26 billion by 1994.[13] Some observers claimed that Europe was suffering from a wide 'technology gap' in relation to the United States and Japan and that Europe's reliance on imported technology made it vulnerable.[14]

The dismal state of European IT was laid at the feet of numerous factors: lack of education and training; weak entrepreneurial drive in Europe; and low levels of research. The nature of IT discouraged the requisite investment: IT product life cycles are extremely short; technological trajectories are uncertain although technological break-through occurs often; development costs and risks have sky-rocketed. Few firms were able independently to adapt to, much less master and succeed in, this environment. They needed to collaborate to survive, but for commercial reasons, they were hesitant to join forces in the design or manufacturing phases of production. They were, however, willing to collaborate in pre-competitive research (research that does not have immediate commercial application).[15]

Driven by the strategic importance of IT and the fact that public support for pre-competitive research was permitted under GATT regulations and EC competition law, governments across Europe funded a spate of programmes encouraging collaborative pre-competitive IT research.[16] Esprit was one such programme. Esprit would reduce or avoid the duplication of national pre-competitive IT R&D efforts, enable research teams to reach the 'critical mass' and stability necessary for effective R&D and decrease European reliance on imported technology. All of these would facilitate the development of standards of European origin and a European technology base that would allow European IT to become competitive with Japan and the US.[17] To implement Esprit, a new bureaucracy was created in Brussels. The bureaucracy opened with fewer than 50 civil servants. By the turn of the decade, it had become one of the European Commission's largest, and some say ambitious, Directorate Generals.

Simultaneous with the creation of Esprit at the Community level, some EC governments created their own national information technology research and development programmes. For example, the French government created the 1982 Plan d'Action Filiere Electronique and a programme of microelectronics support while the German government funded research programmes in microelectronics, optoelectronics and telecommunications. In 1983, the British Government approved the Alvey

---

[13] 'Europe's Technology Gap', *op. cit.*, in note 9.

[14] See, for example, Jean Jacques Servan Schreiber, *Le Defi Americain* (Paris: De Noel, 1967).

[15] OECD, *Technical Cooperation Agreements Between Firms: Some Initial Data and Analysis* (Paris: OECD, 1986).

[16] For a discussion of the relationship between R&D and economic performance and the requirements of government technology policy, see Partha Dasgupta and Paul Stoneman (eds.), *Economic Policy and Technological Performance* (Cambridge: Cambridge University Press, 1987).

[17] See Joachim W. Muller, *European Collaboration in Advanced Technology* (Amsterdam: Elsevier, 1990).

Programme, which was a five-year, £350 million programme supporting collaborative, pre-competitive IT research between British firms, universities and research establishments. Alvey was created in the belief that Government funding for research would protect British firms from the vagaries of competition, giving British firms an opportunity to catch up with their Japanese, US and European rivals.

A small Directorate was created in the Department of Industry (later the Department of Trade and Industry) specifically to implement the Alvey Programme. The Alvey Directorate was a bureaucratic anomaly. It was comprised of civil servants from three Whitehall departments (the Ministry of Defence, the Science Engineering Research Council and the Department of Industry) and secondees from British information technology companies. The Directorate operated independently of existing, although weak, Departmental, interdepartmental and Cabinet Office control and coordination mechanisms. Its members intentionally ignored Whitehall operating procedures and applied their own, rather lax and unorthodox, decision-making methods. This autonomous organization was given responsibility for administering Esprit in the UK.

Esprit and the Alvey Programme were remarkably similar. They focused on pre-competitive R&D and although Esprit was wider in scope, it covered the same enabling technologies as the Alvey Programme. Alvey's goal, however, seemed to contravene the spirit of Esprit. Alvey was autarkic. It protected British firms from foreign competition, including from European firms with whom British companies and academics collaborated in Esprit.

The simultaneous existence of two strikingly similar programmes, which were both administered in Britain by a single bureaucracy, immediately raises the issues of coordination and duplication. What was the relationship between the two programmes? In 1983, the relationship was expressed in the following terms: 'Esprit is complementary to the programme we propose [the Alvey Programme].'[18]

By 1988, the Alvey Programme and its implementing Directorate had been disbanded. The demise of the Alvey Programme did not, however, mark the end of British Government support for IT research. Government continued to fund British IT research, at a significantly lower level than the Alvey Programme, while it contributed to Esprit finances. In 1988, the relationship between Esprit and the national effort had changed: British IT research programmes were to be 'complementary to Esprit'.[19]

---

[18] Department of Industry, 'A Programme for Advanced Information Technology: The Report of the Alvey Committee' (London: Department of Industry, 1982), p. 7.

[19] Department of Trade and Industry, 'DTI -- the Department for Enterprise', Cm 278 (London: HMSO, January 1988), p. 36.

Was the difference between these two statements of linguistic interest only or did it reveal a significant shift in policy? Preliminary interviews suggested that Esprit and the Alvey Programme were perceived as rivals, as competitors. Perhaps the latter explanation was valid. In order to make sense of this 'competition', I turned to the literature on bureaucratic politics: to Allison, Halperin, Destler, Steinbruner, Gallucci and others.[20]

It quickly became apparent that while the simplicity of the Bureaucratic Politics perspective is attractive, it has important weaknesses that could render it more misleading than illuminating. The basic argument of the perspective is simple: bureaucrats have interests that are often not synonymous with the objectives of their Ministers; those interests are determined by the bureaucrat's position in the bureaucracy; bureaucrats compete to protect or advance their own interests; that competition can determine a country's foreign policy. This perspective is now largely accepted by scholars on both sides of the Atlantic as a core middle range theory assisting in the analysis of foreign policy-making,[21] but it contains significant weaknesses.[22] It is overstated,[23] too reliant on a single-factor explanation of foreign

---

[20] I.M. Destler, *Presidents, Bureaucrats and Foreign Policy* (Princeton, NJ: Princeton University Press, 1972); John D. Steinbruner, *The Cybernetic Theory of Decision Making* (Princeton, NJ: Princeton University Press, 1974); Robert L. Gallucci, *Neither Peace Nor Honor* (Baltimore, MD: Johns Hopkins University Press, 1975); Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (Boston, MA: Little, Brown, 1971); Morton Halperin, *Bureaucratic Politics and Foreign Policy* (Washington, DC: Brookings Institute, 1974); Graham Allison and Morton Halperin, 'Bureaucratic Politics: A Paradigm and Some Policy Implications' in Raymond Tanter and Richard Ullman, *Theory and Policy in International Relations* (Princeton, NJ: Princeton University Press, 1972).

[21] See, for example, Steve Smith, 'Foreign policy analysis and the study of British foreign policy' in Lawrence Freedman and Michael Clarke, *Britain in the World* (Cambridge: Cambridge University Press, 1991); Steve Smith, 'Perspectives on the Foreign Policy System: Bureaucratic Politics Approaches' in Michael Clarke and Brian White (eds.), *Understanding Foreign Policy: The Foreign Policy Systems Approach* (Aldershot: Edward Elgar, 1989); Christopher Hill and Margot Light, 'Foreign Policy Analysis' in Margot Light and A.J.R. Groom (eds.), *International Relations: A Handbook of Current Theory* (London: Pinter, 1985); and Charles F. Hermann, *et. al.* (eds.), *New Directions in the Study of Foreign Policy* (London: Harper Collins, 1987).

[22] Many critiques of the perspective concentrate on specific weaknesses, but some are more general. See, for example, R.J. Art, 'Bureaucratic Politics and American Foreign Policy', *Policy Sciences* (Vol. 4, 1983), pp. 467-90; Dan Caldwell, 'Bureaucratic Foreign Policy-making', *American Behavioural Scientist* (Vol. 21, No. 1, 1977), pp. 87-110; Dan Caldwell, 'A Research Note on the Quarantine of Cuba', *International Studies Quarterly* (Vol. 22, No. 4, 1978), pp. 625-33; J.P. Cornford, 'The Illusion of Decision', *British Journal of Political Science* (Vol. 4, Part 2, 1974), pp. 231-43; W. Wagner, 'Dissolving the State: Three Recent Perspectives on International Relations', *International Organization* (Vol. 28, 1974), pp. 436-66.

[23] Christopher Hill, 'A Theoretical Introduction' in William Wallace and William E. Paterson (eds.), *Foreign Policy Making in Western Europe: A Comparative Approach* (Farnborough: Saxon House, 1978), p. 19. See also Art, *ibid.*; and Steve Smith, 'Allison and the Cuban Missile Crisis: A Review of the Bureaucratic Politics Model of Foreign Policy Decision-Making', *Millennium: Journal of International Studies* (Vol. 9, No. 1, Spring 1980), pp. 21-40.

policy-making,[24] too 'mechanical and static'[25] and too culture-specific.[26] The perspective would be of little use in analysing British policy in Esprit if the weaknesses are not redressed. Before doing so, however, it is helpful to outline its fundamental propositions.

1.1 The Bureaucratic Politics Approach: the Fundamental Propositions

The Bureaucratic Politics perspective explores a paradox in those modern governments that are organized on the lines of Weber's classic bureaucracy.[27] Weber posited bureaucracy as the most 'virtuous' organization because it is 'dehumanized', or void, of the emotional concerns that hinder rational calculation among humans. Government is divided into official and fixed jurisdictional areas where authority is distributed in a stable way and according to a strict hierarchy. Bureaucrats perform routine activities according to strict rules, or standard operating procedures. Bureaucracies are exclusive: only those who meet strict qualifications can participate in the process. For Weber, 'bureaucracy has a "rational" character: rules, means, ends and matter-of-factness dominate its bearing.'[28] 'Modern loyalty is devoted to impersonal and functional purposes'[29] and strict rules govern the use of 'coercive means, physical, sacerdotal, or otherwise'.[30]

Although bureaucracy is designed to 'dehumanize' decision-making, it does not eradicate entirely the emotional, or more irrational, elements of human nature.[31] Even Weber admitted that: 'Every bureaucracy seeks to increase the superiority of the professionally informed by keeping their knowledge and intentions secret. Bureaucratic administration always tends to be an administration of "secret sessions": in so far as it can, it hides the knowledge and action from criticism.'[32] Thus, government cannot be

---

[24] Hill, *ibid.*

[25] Steve Smith, 'Policy Preferences and Bureaucratic Position: The Case of the American Hostage Rescue Mission', *International Affairs* (Vol. 61, No. 1, Winter 1984/85), pp. 23-25.

[26] Christopher Hill, 'Theories of Foreign Policy-Making for Developing Countries' in Christopher Clapham (ed.) *Foreign Policy Making in Developing States* (Farnborough: Saxon House, 1978). See also Joel S. Migdal, 'International Structure and External Behaviour', *International Relations* (Vol. 15, May 1973), pp. 510-26; Karen Dawisha, 'The Limits of the Bureaucratic Politics Model: Observations on the Soviet Case', *Studies in Comparative Communism* (Vol. 13, No. 3, 1980), pp. 300-46; and Arnold Lawrence Horelick, *et. al.*, *The Study of Soviet Foreign Policy: Decision-Theory-Related Approaches* (Beverely Hills, CA: Sage, 1975).

[27] Max Weber, *From Max Weber: Essays in Sociology*, H.H. Gerth and C. Wright Mills (eds.), (London: Routledge & Kegan Paul, 1961).

[28] *Ibid.*, p. 244.

[29] *Ibid.*, p. 199.

[30] *Ibid.*, p. 196.

[31] *Ibid.*, p. 216.

[32] *Ibid.*, p. 233.

rid of the very influences it is designed to abolish. It is around this paradox that Allison and Halperin built their conceptualization of foreign policy-making in the United States (US).

In 1969, Allison applied insights from pluralist, or interest-group, analyses of US domestic policy-making to the US foreign policy process. Pluralist approaches view policy-making as a process of bargaining and competition among individual or organized interests in society.[33] Societal pressures may come from private organized actors or even departments within government. The pluralist approach sees government as a formal set of structures processing inputs and outputs. Government does not have a single, cohesive, controlling decision-making centre, but instead an array of departments exerting pressure according to the issue and the resources available to them.[34] Government moves in the direction of the strongest pressure. From this perspective, the state pursues some aggregation of particular societal interests rather than objectives that supersede particular interests and are understood in terms of the national interest.[35]

Allison took insights from the pluralist account of domestic policy-making and applied them to foreign policy-making. He developed two models: Organization Process (Model II) and Bureaucratic Politics (Model III). These Models were concerned to look behind decision-making, so to speak, at the process of decision-making. They see a plurality of actors pursuing numerous, often conflicting, interests as the source of government decisions. Allison posited these models as distinct from, and contrary to, what he termed the Rational Actor Model (Model I). The Rational Actor Model paid little attention to the process or mechanics of decision-making.

---

[33] See, for example, Robert A. Dahl, *A Preface to Democratic Theory* (Chicago, IL: University of Chicago Press, 1956); Samuel P. Huntington, *The Common Defense* (New York: Columbia University Press, 1961); Roger Hilsman, *To Move a Nation* (New York: Doubleday, 1967); Charles E. Lindblom, 'The Science of Muddling Through', *Public Administration Review* (Vol. 29, No. 2, Spring 1959), pp. 79-88; Richard Neustadt, *Presidential Power: The Politics of Leadership* (New York: Wiley, 1960).

[34] David B. Truman, *The Governmental Process: Political Interests and Public Opinion* (New York: Knopf, 1951).

[35] For advocates of the national interest approach, see E. H. Carr, *The Twenty Year's Crisis, 1919-1939: An Introduction to the Study of International Relations*, Second Edition (London: Macmillan, 1946); Robert Gilpin, *War and Change in World Politics* (Cambridge: Cambridge University Press, 1981); Stephen D. Krasner, *Defending the National Interest: Raw Materials Investments and U.S. Foreign Policy* (Princeton, NJ: Princeton University Press, 1978); Hans J. Morgenthau, *Politics Among Nations: The Struggle for Power and Peace*, Sixth Edition (New York: Alfred A. Knopf, 1985); Robert W. Tucker, *The Purpose of American Power: An Essay on National Security* (New York: Praeger, 1981); Kenneth Waltz, *Foreign Policy and Democratic Politics: The American and British Experience* (Boston, MA: Little, Brown, 1967); and Arnold Wolfers, *Discord and Collaboration: Essays on International Politics* (Baltimore, MD: The Johns Hopkins University Press, 1962).

Government decision-making was a simple process where governmental actors pursued a single interest, called the national interest.

Although the Organization Process and Bureaucratic Politics Models explain government decisions in terms of the processes by which it is made, they emphasize different elements in that process. Organization Process focuses on standard operating procedures and explores organizational inertia and managerial complexity inherent to large organizations. Individual motivation and behaviour are not a significant variables. Bureaucratic Politics,[36] on the other hand, empowers the individual by viewing policy as the unintended resultant of competition between individuals acting on behalf of government. They do not pursue that ephemeral national interest, but rather some combination of personal, organizational and national security interests.

1.1a Interests

Early scholars of international relations suggested that governments 'follow...but one guiding star, one standard for thought, one rule for action: the national interest'.[37] They saw foreign policy-making as a rational, or logical, process involving bureaucrats who make choices, each having known consequences, that advanced the national interest. Bureaucratic Politics dismisses the idea that foreign policy-making involves bureaucrats who single-mindedly pursue the national interest. It proposes instead that foreign policy-making results from competition among bureaucrats who desire to advance interests other than the mythical national interest. (Allison and Halperin use the term 'bureaucrat's in a general sense to refer to individuals who make decisions in a government.) The intimately related alternative interests are personal, domestic, organizational and national security.[38]

Personal interests are numerous. Bureaucrats may be driven by the desire to infer their own deeply felt images, assumptions and values on a particular issue. They may be compelled by psychological needs unrelated to the immediate issue. They may be concerned with occupational issues such as career advancement, influence, job satisfaction, responsibility and resources. While not underestimating the others, Bureaucratic Politics emphasizes occupational interests.

---

[36] The following convention is used. 'Bureaucratic Politics' denotes the perspective advanced by Allison and Halperin. This is in contrast to 'politics among bureaucrats', which refers simply to competition among bureaucrats. Wherever possible, I refrain from using the term 'politics among bureaucrats' and use the term 'competition' instead.

[37] Hans J. Morgenthau, *In Defense of the National Interest: A Critical Examination of American Foreign Policy* (New York: Knopf, 1951), p. 242. See also Joseph Frankel, *National Interest* (London: Pall Mall Press, 1970).

[38] Allison and Halperin suggested domestic interests, but failed to distinguish it from the other three. Allison and Halperin, *op. cit.*, in note 20, p. 43.

The occupational interests of bureaucrats are determined by the position they occupy, or role they play, in the bureaucracy. A particular issue will have a different effect on each bureaucrat's interest and, as a result, each bureaucrat will interpret and act upon issues in a different manner. Thus, because their stakes differ and because they see different faces of an issue, their stands will differ. Preference is determined by position: where you stand depends on where you sit.'[39]

The Bureaucratic Politics perspective understands bureaucracy as an institution through which bureaucrats' personal interests are legitimated, perpetuated and advanced. Because their personal interests are anchored in their bureaucracy, bureaucrats will defend their organization's interests: its autonomy, morale, essence, roles, missions and budgets.[40] Thus, organizational interests cannot exist independently of personal interests. They are a composite of the personal interests of a dominant coalition within the organization.

Allison and Halperin cursorily introduced a third category of interest that bureaucrats pursue in lieu of the national interest: national security. They write that no government actor 'wants to see his nation attacked'.[41] This is an interest shared by all participants, but it is overshadowed by personal and organizational interests: 'Even when players are concerned about national security interests, however, they are likely to see the battles as being won or lost mainly at home.'[42] While national security interests may be common to all bureaucrats, they define them in terms of their personal and organizational interests.

1.1b The Nature of Policy-Making

The essence of Bureaucratic Politics is simple. It sees 'the individuals within government, and the interaction among them, as determinants of the actions of a government in international politics. What a government does in any particular instance can be understood largely as a result of bargaining among players positioned hierarchically in government'.[43] Allison and Halperin use the term 'politics' to refer to 'bargaining' and to 'subtle pulling and hauling and intricate games'[44] that are employed as bureaucrats compete to achieve their personal and organizational interests. Thus, government action is determined by politics among bureaucrats.

---

[39] Halperin, *op. cit.*, in note 20, p. 16.
[40] Morton Halperin, 'Why Bureaucrats Play Games', *Foreign Policy* (No. 2, Spring 1971), pp. 74-88.
[41] Allison and Halperin, *op. cit.*, in note 20, p. 58.
[42] Allison and Halperin, *op. cit.*, in note 20, p. 58.
[43] Allison and Halperin, *op. cit.*, in note 20, p. 43.
[44] Allison and Halperin, *op. cit.*, in note 20, p. 162 and p. 268.

Bargaining, or politics, involves one bureaucrat making use of advantages that he or she has over others. One such advantage is the perception of power. Allison and Halperin suggest that individuals with power win and they win because others perceive them as powerful.[45] Although the reasoning is tautological, perceptions of power are significant. They are, however, difficult to measure. Therefore, Allison and Halperin explored structural and procedural features of an organizational that bestow bargaining advantage on particular actors as they maneuver to advance their interests. Allison and Halperin referred to these features as 'action channels' or 'regularized means of taking governmental action on a specific kind of issue'.[46]

1.1c Constraints on Bureaucratic Politics

Allison and Halperin did not suggest that government decisions and actions are always the result of politics among bureaucrats. In fact, they suggested two conditions under which politics among bureaucrats does not determine government behaviour. First, when the standard operating procedures of large organizations determine who receives information, limit the menu of alternatives and fix action within a prescribed range. Second, when shared images set boundaries of play in the bureaucratic game.

> Beneath the differences that fuel bureaucratic politics is a foundation of shared assumptions about basic values and facts. These underlying assumptions are reflected in various attitudes and images which are taken for granted by most players....Most participants accept these images. Their idea of the national interest is shaped by these attitudes...[47]

Allison and Halperin suggested that these shared images can, under certain circumstances, be so strong that they alone determine behaviour. This occurs when: national security interests dominate; when shared values create a consensus on what the national security requires; and when actions derive directly from decisions.[48] In these cases, personal and organization interests, and competition over them, become irrelevant in the policy process.

---

[45] Allison, *op. cit.*, in note 20, p. 52 and p. 169.
[46] Allison, *op. cit.*, in note 20, p. 169. 'Action' was defined as the 'various acts of officials of a government in exercises of governmental authority that can be perceived outside the government'. Allison and Halperin, *op. cit.*, in note 20, p. 45.
[47] Allison and Halperin, *op. cit.*, in note 20, p. 56.
[48] Allison and Halperin, *op. cit.*, in note 20, p. 49.

1.2 Weaknesses of the Bureaucratic Politics Perspective

The Bureaucratic Politics perspective was met with a flurry of analysis and criticism that persists to this day. The following discussion is by no means exhaustive, but rather focuses on six of the most substantive weakness of the perspective: the logic/politics dichotomy; treatment of national interest; the role of political leaders; the perspective's culture-specificity; its treatment of preference formation; and its methodological soundness.

1.2a Logic/Politics Dichotomy

Scholars traditionally portrayed foreign policy-making as a rational, or logical, process where bureaucrats made choices, each having known consequences, that advanced the national interest. The process was harmonious and policy appeared coherent because leaders, unified in their objectives, controlled the bureaucracy. Allison and Halperin called this portrayal the Rational Actor model.

Observing the workings of the US foreign policy bureaucracy, Allison and Halperin witnessed different phenomena. The process appeared conflictual; policy seemed incoherent; and the national interest seemed an inherently ambiguous concept. They deduced that something other than the process attributed to the Rational Actor Model was at work. This other process was politics, or competition, among bureaucrats. They then formulated a model alternative to the Rational Actor one: Bureaucratic Politics.

The two models were presented as alternative approaches. Their distinction was based on the following dichotomy: harmony prevails when a logical or rational process occurs; conflict prevails when politics occurs. Lawrence Freedman exposed the false dichotomy between 'logic' and 'politics'.[49] That false dichotomy is as follows. Politics is twinned with conflict while logic, or rationality, is twinned with harmony; harmony is the converse of conflict therefore logic, or rationality, is the converse of politics. Thus when bureaucrats act politically, they cannot be acting rationally.

Allison and Halperin did not assert that pulling and hauling is irrational behaviour, but the logic of their argument leads the reader to that unsettling conclusion.[50] This conclusion is untenable in light of Bureaucratic Politics' proposition that bureaucrats behave in a manner that maximizes their interests. Bureaucratic Politics presumes intent and calculation as bureaucrats consciously calibrate their

---

[49] Lawrence Freedman, 'Logic, Politics and Foreign Policy Processes: A Critique of the Bureaucratic Politics Model', *International Affairs* (Vol. 52, No. 3, July 1976), p. 434-48.
[50] Allison and Halperin, *op. cit.*, in note 20, p. 43.

behaviour to meet desired ends. Such an association of means with ends is the cornerstone of definitions of rationality.[51] Thus, if bureaucrats employ political means to achieve personal ends, then they must, by definition be acting rationally. Why, then, is their behaviour grouped into a category that is juxtaposed to rationality?

Just as the dichotomy between logic and politics is untenable, the direct correlation between policy incoherence and conflict with politics, or competition, among bureaucrats is suspect. As Freedman suggests, policy is inherently 'messy' given the difficulty of coordinating activity across so many participants and given the lack of complete information upon which many decisions are based. Disorder and conflict should not be attributed to bureaucratic behaviour alone.[52] Moreover, lack of visible conflict should not be presumed to signal that bureaucratic competition is absent. Decisions offered for public scrutiny are often couched in terms of the national interest and reveal little, if any, of the competition that produced them.

1.2b Interests

Bureaucratic Politics suggests that policy results from competition among bureaucrats as each pursues conflicting interests. These interests may be personal, domestic, organizational or national security.[53] Although some categorization of interests is instrumental, this particular typology is weak. The model does not delineate between domestic and personal interests; the distinction between organizational interests and personal interests is tenuous; and the treatment of national security interests and shared images severely weakens the internal logic of the perspective.

Allison and Halperin suggested that the personal interests of bureaucrats are pursued through and legitimized by their organization, thus making the distinction between personal and organizational interests questionable and rendering the applicability of the perspective tenuous. Consider, for example, when behaviour is unlikely to result from the pursuit of organizational interests. This may occur when bureaucrats are not certain how a particular course of action will affect their organization, when a decision will have no perceived effect on their organizational interests or when important actors are not bureaucrats with an organization to protect

---

[51] See, for example, Sidney Verba, 'Assumptions of Rationality and Non-Rationality in Models of the International System' in James N. Rosenau (ed.), *International Politics and Foreign Policy* (New York: Free Press, 1969). See also James March and Herbert Simon, *Organizations*, Second Edition (Oxford: Blackwell, 1993); and Richard M. Cyert and James G. March, 'A Behavioral Theory of Organizational Objectives' in Mason Haire (ed.), *Modern Organization Theory* (New York: Wiley, 1959); and Lindblom, *op. cit.*, in note 33.

[52] Freedman, *op. cit.*, in note 49, p. 438.

[53] Allison, *op. cit.*, in note 20, p. 48.

or a bureaucratic position that dictates behaviour.[54] How does Bureaucratic Politics apply in this case?

As regards national interest, the Bureaucratic Politics perspective suggested that because that national interest is inherently ambiguous, personal and organizational interests established by bureaucratic position determine behaviour. Having devalued the national interest concept, Allison and Halperin brought it in through the back door by suggesting that national security interests are shared by all members of government. In some cases, shared national security interests over-ride personal and organizational interests and determine behaviour. These cases are: when national security interests dominate; when shared values create a consensus on what the national security requires; and when actions derive directly from decisions.[55] Thus, the Bureaucratic Politics Model applies under one set of circumstances while the Rational Actor Model applies under another.

This is acceptable if it was not for two other elements of the Bureaucratic Politics perspective. First, shared images, those things that are pre-determined, not controversial and somehow related to the national interest, circumscribe bureaucratic behaviour. It would seem that shared images perform the same role that Allison and Halperin attributed to national interest. Thus, a concept associated with the Rational Actor Model is at work in the Bureaucratic Politics perspective. The bureaucrat obeys shared images, but at the same time struggles to advance personal or organizational interests.

Second, national security interests are shared and in some cases determine bureaucratic behaviour, causing the policy process to resemble the Rational Actor Model. However, Allison and Halperin wrote that bureaucrats define national security interests in terms of their personal and organizational interests, which differ from bureaucrat to bureaucrat according to their position in the bureaucracy. It would seem that national security interests may not be common at all and that the Rational Actor Model includes elements of the Bureaucratic Politics Model.

Freedman is correct in suggesting that Model I and Model III are not two distinct paradigms, but rather 'two ends of a continuum. At one end all is rationality: at the other all is politics. The "rational" part proceeds from shared principles and is non-controversial while the political part consists of those areas where values and interests compete for influence'.[56] One perspective is most appropriate given one set of circumstances and the other is most appropriate given another set, but they are not distinct as Allison and Halperin proposed.

---

[54] Gallucci, *op. cit.*, in note 20, p. 146.
[55] Allison and Halperin, *op. cit.*, in note 20, p. 58.
[56] Freedman, *op. cit.*, in note 49, p. 441.

Allison and Halperin's treatment of shared images contributes to the false dichotomy internal to their Bureaucratic Politics Model. Shared images are pre-determined, not controversial and somehow related to the national interest. They thus fall into the category of behaviour that is rational, or logical. Personal, domestic and organizational interests, on the other hand, are political and fall into the category of non-rational. By suggesting that shared images delimit bureaucratic behaviour, Allison and Halperin create a bureaucrat who acts rationally and non-rationally at the same time. The bureaucrat obeys shared images while struggling to advance personal or organizational interests.

This weakens the model. First, the wisdom of assuming rationality *or* non-rationality, but not both simultaneously, in models of decision-making is ignored.[57] Second, a model that was to present an alternative to the rationality assumption is based upon an assumption of rationality. Perhaps Allison and Halperin were aware of the strained logic. Their suggestion that individuals equate their personal and organizational interests with the national interest enabled bureaucrats to pursue each interest set simultaneously and without conflict. But if this the case, then why distinguish between the different interests at all?

Furthermore, although Allison and Halperin referred to the policy-elite as the source of shared images and to the fact that shared images may change as leadership changes or in response to an external stimulus, their treatment of the concept was too cursory given the fundamental role of shared images in the perspective. The analyst should question whether shared images are pre-determined, static and constraining and explore their sources, how they come to be shared and how they evolve over time and across issues. Most importantly, the analyst should consider the possibility that shared images may not be shared at all, but rather that they may be contested within a government among leaders as well as bureaucrats.

1.2c Role of Leaders

Bureaucratic Politics refers to political leaders as the source of shared images. Because these shared images constrain bureaucratic behaviour, political leaders do have some role to play in the perspective. It is a limited and rather impotent role, however.[58] As presented, the perspective asks us to believe that the 'Chief Executive is tramelled by

---

[57] See Verba, *op. cit.*, in note 51.

[58] For criticisms, Stephen Krasner, 'Are Bureaucracies Important? (or Allison Wonderland)', *Foreign Policy* (No. 7, 1972), pp. 159-79; Amos Perlmutter, 'The Presidential Political Center and Foreign Policy', *World Politics* (Vol. 27, No. 1, 1974), pp. 87-106; and Jerel A. Rosati, 'Developing a Systematic Decision-Making Framework: Bureaucratic Politics in Perspective', *World Politics* (Vol. 23, No. 2, January 1981), pp. 234-52.

the permanent government' and that the 'bureaucratic machine escapes manipulation and direction even by the highest officials'.[59] A few studies have proven this to be the case, but to imply that it occurs under most circumstances is certainly a tall order. It is inconceivable, in my mind, that political leaders are always, or even almost always, held hostage to the workings of the bureaucracy.

1.2d Culture-Specificity

Allison and Halperin advanced their Bureaucratic Politics perspective by analysing an important US foreign policy crisis: the Cuban Missile Crisis. Although they suggested that the perspective was applicable to foreign policy-making in other countries, several studies have found the perspective to be of limited use explaining foreign policy in developing states, the Soviet Union and Western Europe.[60] Other studies, however, have found that the perspective does shed light on policy-making in developing countries and the Soviet Union.[61] Clearly, the issue has not been resolved.

1.2e Preference-from-Position

As mentioned previously, one of the major strengths of the Bureaucratic Politics perspective is its simplicity. Bureaucrats compete to advance their own interests; those interests are determined by their position in the bureaucracy; and that competition can affect policy. Perhaps the perspective is over-simplified. Although it allows for bureaucrats' interests to be shaped by the (nebulous) shared images and national security concerns, its main proposition is that preferences are determined by position.[62] (Henceforth, this is referred to as the preference-from-position function.)

This function reduces the individual to a '*Homo Bureaucraticus*...a being with a somewhat petty and parochial perspective who knows on what side his bread is buttered'[63] and who is fundamentally conflictual and competitive.[64] Bureaucrats are hostage to their place in the system. They are not free agents, capable of establishing

---

[59] Krasner, *ibid.*, p. 160.
[60] Hill, *op. cit.*, in note 23; Migdal, *op. cit.*, in note 26; Dawisha, *op. cit.*, in note 26; Horelick, *et.al., op. cit.*, in note 26; Wallace, *op. cit.*, in note 12; William Wallace, 'Old States and New Circumstances: the International Predicament of Britain, France and Germany' in Wallace and Paterson (eds.), *op. cit.*, in note 23.
[61] See, for example, Herman M. Weil, 'Can Bureaucracies be Rational Actors?', *International Studies Quarterly* (Vol. 19, No. 4, 1975); and Jiri Valenta, *Soviet Intervention in Czechoslovakia, 1968: Anatomy of a Decision* (Baltimore, MD: Johns Hopkins University Press, 1979).
[62] Smith, *op. cit.*, in note 25; Hill, *op. cit.*, in note 23, p. 19.
[63] Freedman, *op. cit.*, in note 49, p. 437.
[64] Hill, *op. cit.*, in note 23, p. 17.

their preferences according to, for example, personal values or individual belief systems.[65]

1.2f Methodological Strength

Although the perspective has been useful in a number of foreign policy studies, some critics have cautioned against employing it as a theory.[66] They suggest that it is incapable of formulating and testing hypotheses or of predicting behaviour and therefore cannot be seen as a theory. Its usefulness comes instead as an 'analogy' that presents an alternative way of viewing foreign policy decision-making or as a 'productive paradigm' that 'paves the way for a normal science capable of solving a good proportion of the puzzles drawn to the analysts attention'.[67]

1.3 Strengthening the Perspective

The Bureaucratic Politics perspective as formulated by Allison and Halperin clearly has substantial weaknesses, but its strength lies in its focus on an important element of the decision-making process that was ignored in other theories of foreign policy-making. *Can the perspective be of use in analysing British foreign policy in Esprit if it is refined in such a manner that its essence is preserved, but some of its inflated claims punctured?* This thesis sets out to answer that question, keeping in mind one fundamental caveat. This thesis tests the usefulness of the perspective as an analytical tool, as a perspective, rather than as an all-singing, all-dancing theory or model capable of explaining every decision taken in Esprit. The fact that Bureaucratic Politics can only be used as a middle range theory does not detract from its usefulness, however.[68] The utility of the perspective for explaining important elements of the policy process has been proven in earlier literature. Having established that caveat, this thesis now goes on to refine the perspective.

---

[65] See Smith, *op. cit.*, in note 25; Martin Hollis and Steve Smith, 'Roles and Reasons in Foreign Policy Decision-making', *British Journal of Political Science* (Vol. 16, No. 3, 1986), pp. 269-86; and Steve Smith, 'Perspectives on the Foreign Policy System', *op. cit.*, in note 21, p. 128.

[66] Davis B. Bobrow, *International Relations: New Approaches* (New York: Free Press, 1972), p. 41. See also, E. Yanarella, '"Reconstructed Logic" and "Logic-in-use"' in 'Decision-making Analysis: Graham Allison', *Polity* (Vol. 8, 1975), pp. 156-72; and M. Steiner, 'The Elusive Essence of Decision', *International Studies Quarterly* (Vol. 21, 1977), pp. 389-422.

[67] David A. Welch, 'The Organizational Process and Bureaucratic Politics Paradigms', *International Security* (Vol. 17, No. 2, 1992), p. 120.

[68] For a discussion of the merits of middle range theory in foreign policy analysis, see Smith, 'Foreign Policy Analysis', *op. cit.*, in note 21.

1.3a Interests

The human condition is infinitely complex, thus rendering any typology of bureaucrats' interests weak, but some simplifying typology is necessary. It must be more discerning than one based on personal, organizational and national security interests, as is the Bureaucratic Politics perspective.

When analysis focuses on bureaucrats in their occupational setting, it is futile to distinguish between personal and organizational interests. Allison and Halperin suggested that personal interests are pursued through their organization and that organizational interests are the aggregation of the personal interests of a dominant sub-group. Having related personal and organizational interests so closely, they did not provide enough justification for why the two should be separate. In fact, the two are so inextricably linked that it makes more sense to combine them in a single category: occupational interests. This category includes the desire to maximize responsibilities, rank and budgets. Bureaucrats may not pursue all of these simultaneously (under some circumstances, pursuit of one may even prohibit pursuit of another) or with equal zest.[69] *Nevertheless, this thesis tests whether all bureaucrats are interested at some point and to some degree with one or more of these occupational concerns.* An organization may be comprised of bureaucrats with similar interests, but the organization itself does not have interests that are distinct from the occupational interests of its members.

Using a single category of interests facilitates explanation of behaviour that falls into the following categories: when actors are uncertain how a particular course of action would affect their organization; when a decision has no perceived effect on the organization; or when actors are not bureaucrats with an organization to protect or a bureaucratic position that conditions behaviour.[70] The ability to explain the behaviour

---

[69] The public choice literature on bureaucracy is helpful. William Niskanen, *Bureaucracy: Servant or Master?* (London: Institute for Economic Affairs, 1973) and *Bureaucracy and Representative Government* (New York: Aldine-Atherton, 1971), suggests that budget maximization was the sole force driving bureaucratics. Patrick Dunleavy, *Democracy, Bureaucracy and Public Choice* (London: Harvester, 1991) suggests a number of non-pecuniary interests as alternatives to budget maximization. See also Anthony Downs, *Inside Bureaucracy* (Boston, MA: Little, Brown, 1967).

[70] Robert Gallucci highlights this weakness of Bureaucratic Politics. He suggests that individuals falling within this category do not possess organizational interests that are bound up with their careers in the bureaucracy. Thus, their behaviour is not geared toward protecting their organization. Gallucci suggests instead that they are driven by personal interests that are independent of the bureaucracy. Gallucci, *op. cit.*, in note 20, p. 147. Gallucci's assertion is reasonable, but difficult to prove unless the interests and actions of private actors brought into a bureaucratic organization depart significantly from bureaucrats in the same organization or that private actors behave in a manner that damages the organization. In fact, the interests of private actors, like bureaucrats, are inextricably linked to their organization. Hence, it is futile to try to separate them.

of non-bureaucratic actors is particularly important for this study because many important actors were not bureaucrats, but industrialists and academics seconded for a limited time into the Department of Trade and Industry.

1.3b Preference Formation and Action Channels

This thesis tests Bureaucratic Politics' fundamental assertion that preference is determined by a bureaucrat's position in an organization (the preference-from-position function.) Is a bureaucrat's preference, or preferred course of action, on a particular issue determined by the bureaucrat's perception of how that issue affects his or her budgets, rank and responsibilities (occupational interests), which are in turn determined by his or her current, or desired future, position in the organization? Will the bureaucrat choose action designed to advance his or her occupational interests?

The means a bureaucrat chooses to employ in pursuit of that preference is largely determined by the operation of action channels. Allison and Halperin defined action channels as 'regularized means of taking governmental action on a specific kind of issue'. Action channels were given a central role in the perspective as a determinant of bargaining advantage, but their formulation was sketchy and static. A more detailed exposition of action channels is warranted.

I found March and Simon's work valuable in this regard. They argue that the 'organizational environment and social environment in which the decision maker finds himself determines what consequences he will anticipate, what ones he will not; what alternatives he will consider, what ones he will ignore'.[71] Organizations have rules, which may be formal or informal, that establish who is involved in decision-making and on what issues. Those normally involved in decision-making develop relations and contacts with one another. The rules also determine who collects, analyzes and disseminates information. Individuals who have access to valuable information and are included in decision-making can define the issue at hand, set the agenda and identify and advance particular options. Those options usually benefit themselves or those with whom they have developed a relationship. Action is then taken in pursuit of these particular options while other possible issues, agendas and options are dismissed along with any action necessary for their fulfilment. Action is channelled in the direction determined by those involved in decision-making and inside the information loop.

This is so for several reasons. It is unlikely that private actors will be invited into a government bureaucracy if they do not entertain interests that are similar to those of the other members of the organization. Similarly, private actors will seek or agree to the secondment only if they perceive that the move will advance their own interests.

[71] March and Simon, *op. cit.*, in note 51, p. 160.

Hence, the term 'action channels'. *This thesis suggests that bureaucrats, in pursuit of their own objectives, choose action (or means) from the menu of alternatives thrown up by their organization's action channels.*

This thesis does not treat action channels as static and pre-determined or necessarily standard and consistently applied. *Rather, action channels are seen as the product of bureaucratic competition and therefore dynamic.* Because action channels bestow advantage and disadvantage, bureaucrats will work to design action channels that advance their interests. Theorizing action channels in such terms addresses the need for a 'two-way process between structure and actor'.[72]

This thesis' treatment of action channels is also designed to give the Bureaucratic Politics perspective predictive capability. Action channels predispose bureaucrats to certain behaviour and confer bargaining advantages in competition among bureaucrats. If these action channels can be identified, they can be analysed and used to predict behaviour.

1.3c Political Leaders

The Bureaucratic Politics perspective virtually ignores the dynamic (and significant) relationship between bureaucrats and political leaders. *Homo bureaucraticus* must evolve.

In this study homo bureaucraticus has evolved into a being who, while competitive and actively pursuing occupational interests, is also capable of pursuing the interests of others, even if the interests of others are contrary and harmful to his or her occupational interests. These alternative interests are those articulated by elected politicians holding Ministerial rank. Because this thesis explores how civil servants form their preferences, it is not overly concerned to theorize how Ministers decide their objectives. It may be that Ministerial interests are synonymous with the national interest conceptualized by Morgenthau and Frankel;[73] that Ministerial interests are representative of societal interests, as Krasner perceives them;[74] that Ministerial interests are related to Furnis and Snyder's conception of the national interest -- national interest is 'what the nation, i.e., the decision-maker decides it is';[75] or, more

---

[72] Hollis and Smith, *op. cit.*, in note 65, p. 285.

[73] Morgenthau, *op. cit.*, in note 37; Frankel, *op. cit.*, in note 37. For a discussion of the weaknesses of the national interest as an analytical concept, see James N. Rosenau, *The Scientific Study of Foreign Policy* (New York: Free Press, 1971), pp. 239-49; and George A. Modelski, *A Theory of Foreign Policy* (New York: Praeger, 1962).

[74] Krasner, *op. cit.*, in note 35.

[75] Edgar S. Furniss and Richard C. Snyder, *An Introduction to American Foreign Policy* (New York: Rinehart, 1955), p. 17.

likely, Ministerial interests are determined by the position they occupy in the bureaucracy or the result of group pressures exerted from that bureaucracy.[76] This thesis takes Ministerial interests as given (Ministerial interests are simply taken to be the objectives a Minister pursues while in office) in order to explore how civil servants' interests are determined.

The following question immediately comes to mind: Under what conditions does a bureaucrat pursue Ministerial interests rather than his or her own occupational ones? I found an answer to this question in, of all places, the literature advocating a domestic institutional approach to British foreign policy-making.[77] For example, in his analysis of British foreign-policy making, William Wallace acknowledges that bureaucratic competition is a natural part of the policy process in Britain.

> ...policy evolves in a continuing dialogue between the responsible ministers and their civil servants, a continuing interaction between political direction and the pressures of established practice and administrative interests. Where political direction is clear, it is able to carry the administrative machine with it; in the absence of firm political pressures, however, administrative politics prevail.[78]

And, 'In the British civil service, as in the American, "Where you stand depends on where you sit"'.[79] David Vital likewise recognizes the existence of bureaucratic competition in Britain: 'All governments face the problem of distinct ministries operating within a single field, producing distinct and sometimes conflicting analyses and plans, manned by officers with separate departmental loyalties and career structures....'[80]

These analyses recognize the ubiquity of bureaucratic competition, but deny that it has real and tangible effects upon policy. According to Wallace,

> Whitehall is not Washington; the open conflicts between sections of the administration which characterize bureaucratic politics in America have no exact parallel in Britain. Many officials indeed deny the relevance of analyses of

---

[76] This formulation is advanced in the Foreign Policy Approach (FPA) approach advocated by Steven Smith, 'Foreign Policy Analysis', *op. cit.*, in note 21.

[77] See, for example, Peter Richards, *Parliament and Foreign Affairs* (London: Allen & Unwin, 1967); Kenneth Waltz, *Foreign Policy and Democratic Politics: The British and American Experience* (Boston, MA: Little, Brown, 1967); David Vital, *The Making of British Foreign Policy* (London: Allen & Unwin, 1968); Robert Boardman and A.J.R. Groom (eds.), *The Management of Britain's External Relations* (London: Macmillan, 1973); John Barber, *Who Makes British Foreign Policy?* (Milton Keynes: Open University Press, 1976); Wallace, *op. cit.*, in note 12; Avi Shlaim, Peter Jones and Keith Sainsbury, *British Foreign Secretaries Since 1945* (Newton Abbot: David and Charles, 1977); and Christopher Coker, *Nation in Retreat?* (Oxford: Pergamon, 1986).

[78] Wallace refered to 'administrative politics' rather than bureaucratic competition, but the similarity is clear. Wallace, *op. cit.*, in note 12, p. 9.

[79] Wallace, *op. cit.*, in note 12, p. 10.

[80] Vital, *op. cit.*, in note 77, p. 64.

> policy-making in terms of administrative conflict or bureaucratic politics. It is part of the style of Whitehall that differences are muted and as far as possible concealed from the public eye, and that interdepartmental disputes are subject to the acceptance of an overriding common interest.[81]

Such denials are not surprising given the fact that the British policy-making system is grounded in the theory of Ministerial accountability and Cabinet collective responsibility. Decisions that visibly resulted from the machinations of a bureaucracy concerned with its own interests clearly fall short of the image collective responsibility is meant to portray. Denials should not be taken as unequivocable proof that bureaucratic competition does not affect policy.

Wallace and Vital argue that Ministerial authority and the large and complex web of Whitehall interdepartmental and Cabinet coordinating committees set Government-wide priorities and resolve conflict before it affects policy, thus preventing bureaucratic competition from having a real effect on policy.[82] Vital described the British policy-making process in the following terms. 'The influence [of the civil service] is brought to bear through the machinery itself according to a plan and in a manner well-understood and accepted by all concerned.'[83] 'Where conviction is lacking, respect for constitutional principles, habit and self-interest will usually suffice to ensure that the administrative machine keeps together.'[84] The efficiency of the machine 'hinges on the cooperation and mutual confidence that obtains between those who are at the top of the pyramid of authority and responsibility and those at its base upon whom they depend. In Britain both such cooperations and such confidence are to be found to a high degree'.[85]

Wallace emphasizes the importance of Ministers. Although disputing the relevance of the Bureaucratic Politics perspective to British policy-making, he suggests that,

> ...policy evolves in a continuing dialogue between the responsible ministers and their civil servants, a continuing interaction between political direction and the pressures of established practice and administrative interests. Where political direction is clear, it is able to carry the administrative machine with it; in the absence of firm political pressures, however, administrative politics prevail.[86]

---

[81] Wallace, *op. cit.*, in note 12, p. 9.
[82] Wallace, *op. cit.*, in note 12, pp. 1-19, pp. 45-55; and Vital, *op. cit.*, in note 77, pp. 57-102.
[83] Vital, *op. cit.*, in note 77, p. 46.
[84] *Ibid.*, p. 47.
[85] *Ibid.*
[86] Wallace, *op. cit.*, in note 12, p. 9.

Writing on the civil service during Mrs Thatcher's tenure, Sir Patrick Nairne argues that the relationship between Ministers and civil servants is the most important factor affecting the efficient working of the Whitehall system.[87] Nairne suggests that Ministers must perform several duties in order for Whitehall to perform effectively. Among the duties are: Ministers must 'know their own mind -- that is, to know what they want to achieve in their department in the light of their particular political and ministerial responsibilities'; Ministers must provide the guidance civil servants depend upon to perform effectively; and Ministers must be 'up front' in presenting their Departmental policies. When these conditions are present, civil servants faithfully implement their Minister's objectives.

These scholars may be accurate in suggesting that bureaucratic competition does not affect British policy when Ministerial authority is established and when Whitehall control and coordination mechanisms are functioning effectively. But what happens when Ministerial authority is not established and when Whitehall structures are incapable of controlling and coordinating policy within and across departments? It could be that bureaucratic competition has an effect on policy-making.

This thesis hypothesizes that civil servants are more likely to pursue their own occupational interests in lieu of their Minister's interests under the following conditions: 1) when Ministers fail to articulate clearly consistent objectives to civil servants and when Ministers fail to exert control or maintain supervision over a particular issue;[88] *and 2) when Whitehall mechanisms fail to control and coordinate activity within and across departments.*

As regards the first, while Ministers may perceive their objectives as unambiguous, immutable and internally consistent, civil servants may be uncertain of the direction they are expected to take. This may occur when, for example, leaders respond to the realities of office by making decisions that are inconsistent or incompatible with their stated objectives; when they articulate conflicting objectives; when leadership, united in Opposition, splits after taking office and individual Ministers undertake contradictory policies; or when the leadership itself is uncertain of its own objectives.

---

[87] Sir Patrick Nairne, 'The Civil Service: "Mandarins and Ministers"' (Wroxton College, Wroxton Papers in Politics, 1990). See also Anthony Sampson, *Anatomy of Britain* (London: Hodder and Stoughton, 1962).

[88] Rosati, *op. cit.*, in note 58, took something of a similar line, but focused exclusively on the Presidency without consideration of Ministers or control and coordination structures and procedures within the American civil service. He proposed three US decision-making types (Presidential, Bureaucratic and Local Dominance) and suggested that when Presidents do not dominate a policy issue, then policy-making may resemble that proposed by the Bureaucratic Politics perspective.

Ministers may fail to control or maintain supervision over a particular issue for a number of reasons: when policy is of a long-term nature and not regularly incorporated into the more urgent matters facing Ministers;[89] when the nature of the particular area allows it to be easily isolated from wider foreign policy concerns;[90] when the area is not deemed of enough significance to warrant close attention; when they are incapable, due to lack of knowledge, of making decisions and are consequently forced to rely heavily on civil servants; or because they have not created organizational structures and procedures that force civil servants to pursue Ministerial objectives. On the latter, Ministers may, for example, create departmental standard operating procedures that reduce the scope for behaviour that departs from Ministerial objectives or they may design a system for granting promotions, resources and responsibility within a department in such a manner that civil servants who advocate the objectives consistent with their Ministers are rewarded with promotions, larger budgets and greater responsibility. When Ministerial oversight and control are weak, bureaucrats are free to make decisions that advance their own concerns rather than those of their Minister.

Conversely, when Ministers clearly articulate consistent objectives and when they control and supervise an issue, bureaucrats are inclined to pursue Ministerial objectives. The reason for this is that bureaucrats eventually see convergence between their interests and those of their Minister: bureaucrats' occupational interests, as influenced by their position in the bureaucracy, can be achieved by pursuing Ministerial objectives.[91] This is not to suggest that bureaucrats' concerns and Ministerial objectives are necessarily synonymous or that bureaucrats necessarily agree with or sympathize with their Minister's objectives. Objectives are not 'shared' in the sense that participants agree on what constitutes the greater good. Rather, it suggests that when Ministerial authority is exercised, Ministerial objectives and bureaucrats' objectives become compatible. Pursuit of Ministerial objectives facilitates the achievement of occupational interests. In this way, individual rationality and the structural influence of

---

[89] Wallace, *op. cit.*, in note 12, p. 18.

[90] Wallace, *op. cit.*, in note 12, p. 12. In this case, Wallace suggested that it is more appropriate to speak of departmental policies rather than government policies. Michael Clarke, *British External Policy-Making in the 1990s* (Houndmills: Macmillan, 1992), p. 112, suggested a similar situation: in a 'political climate which takes a minimalist view of government's role in the British economy and society, it is natural that individual ministries will tend to have ministerial objectives rather than national objectives, as such'.

[91] Downs' analysis of bureaucracy posited a life-cycle where bureaucratic personalities fluctuate according to the age of the bureaucracy. This thesis is likewise based upon an evolutionary cycle, but one determined by the relationship between Ministers and civil servants. This issue is discussed further later in this Chapter.

bureaucratic position are linked.[92] In contrast, a civil servant opposing the interests of a Minister who has established authority is likely to find that his or her occupational interests are frustrated. Promotions do not occur and responsibilities and budgets shrink or remain static. Opposing a Minister is a very high cost strategy. A more fruitful strategy is to pursue Ministerial objectives and reap the possible rewards of promotions, larger budgets and greater responsibility.

Bureaucracies are designed to limit the scope for individual freedom and authority. The Whitehall system is praised for its hierarchical structures, its network of committees and its consultation mechanisms that, even in the absence of Ministerial oversight and control, circumscribe the freedom and autonomy of individual civil servants and departments. When responsibilities are unambiguously allocated, when hierarchical reporting lines are clearly delineated and when communication and coordination procedures work, the scope for individual freedom is reduced. Conversely, when Whitehall mechanisms fail to control and coordinate policy, civil servants are free to pursue their occupational interests.

1.3d Applicability to Whitehall

This formulation sensitizes the Bureaucratic Politics perspective to British governmental decision-making processes. The ability to do so is made possible by the subject matter of the perspective. The Weberian bureaucracy to which the perspective applies is not culture-specific. As a governmental form characteristic of industrialized economies and democratic societies, bureaucracies are similar from one such society to another. It therefore follows that patterns of behaviour observed in one country's bureaucracy would have parallels in another. Sensibly applied and refined to account for unique governmental structures, procedures and traditions across different societies, Bureaucratic Politics can indeed offer insights into policy-making in governments other than that of the United States. This particular refinement applies to the British political system. It may not be directly applicable to other political systems, but perhaps the basic ideas could be used as the basis for another formulation.

1.3e Behaviour

Bureaucratic Politics' treatment of 'politics', or competition, is inadequate, particularly if it is to be applied to British decision-making. The perspective makes no distinction

---

[92] Smith, *op. cit.*, in note 25, argues for a linkage between rationality and the dictates of bureaucratic position.

between behaviour associated with bureaucratic competition and action in aid of consensus-building. This is particularly problematic when Bureaucratic Politics is applied to British decision-making. A hallmark of British Government is consensus-building, or Government by committee, the ultimate incarnation of which is Ministerial collective responsibility. If behaviour in aid of consensus-building and bureaucratic competition are not distinguished, the analyst is tempted to attribute every action or decision to bureaucratic competition. To make the distinction, it is tempting to explore the nature of the two activities to determine whether behaviour in each differs.

Consensus-building is a process, often without a clear beginning or end, of mutual accommodation and reconciliation where a solution endorsed by all participants is sought. Although consensus-building presumes the existence of divergent interests and although it does not necessarily involve charity and altruism, it is a positive sum game where participants use bargaining, negotiation and coalition-building. Because a long-term commitment is implied, participants are perhaps hesitant to employ means that will jeopardize the good-will they have accumulated. One might say that behaviour in consensus-building is cautious, perhaps considerate, and mitigated by the commitment to a process whose result will be endorsed by all.[93]

Bureaucratic competition, on the other hand, is a zero sum game: one party's gain is necessarily another's loss. The ultimate end of bureaucratic competition is not agreement among participants and arrival at a solution representing the greater good. Rather, victory for a single participant and defeat for another are sought. Behaviour is geared toward immediate personal gain. Consequently, one might find more instances of coercive measures such as domination, repression and secrecy,[94] all of which may be used in an indiscriminate, rash, even vindictive manner.

A distinction derived in such a manner is untenable. Bureaucrats interviewed in the Department of Trade and Industry (DTI) frequently referred to bureaucrats in the Treasury as 'devious', 'sneaky', 'manipulative'. Should we assume, therefore, that the Treasury never tries to build a consensus, but rather that it always competes with the DTI? Further, this distinction does not prevent the analyst from attributing all politics to bureaucratic competition. For these reasons, objective criteria for attributing behaviour to bureaucratic competition, rather than consensus-building, are needed. They are:

- The bureaucrat defined or identified the objective(s) he or she pursued.

---

[93] Roger Hilsman, 'The Foreign-Policy Consensus: An Interim Research Report', *Journal of Conflict Resolution* (Vol. 3, No. 4, 1959), pp. 361-81, disassociates consensus-building and conflict.
[94] Freedman, *op. cit.*, in note 49, p. 445.

- That objective(s) included one or more of the following only: promotion, larger budgets, greater responsibility.
- Although those objectives may have conflicted in the short-term, the bureaucrat perceived a long-term harmony between them.
- The bureaucrat perceived a conflicting relationship between his or her objectives and those of other bureaucrats.
- The bureaucrat interpreted events or issues in terms of how they affected his or her objectives.
- Based on this interpretation and using the best possible information and some calculation of potential consequences, the bureaucrat chose action that he or she expected would lead to larger budgets, greater responsibility or a promotion. (This is the preference-from-position function.) That action may have been negotiation, coalition-building, bargaining, manipulation, deceit, domination, etc. The action would be chosen from a menu established by action channels.

This categorization serves a dual purpose. First, it deters the analyst from attributing all observable behaviour to bureaucratic competition. Only that behaviour designed explicitly to gain budgets, responsibilities or rank is classified as bureaucratic competition. It may be that the criteria are too strict, but I prefer to err on the side of caution.

Second, it redresses the perspective's faulty logic/politics dichotomy. The solution to this problem is self-evident. *Any behaviour where a means-ends relationship is perceived should be treated as rational.*[95] This bureaucrat is the portrait of March and Simon's 'administrative man': his or her rationality is 'bounded' because he or she chooses behaviour with respect to a personal interpretation that may or may not mirror the real situation. The bureaucrat may have conflicting objectives that are not consciously ranked in order of importance; the bureaucrat may choose from a set of alternatives that describe the minimally satisfactory alternatives, or satisfice, rather than search all alternatives and choose the one that maximizes a particular objective; and the bureaucrat may make decisions incrementally rather than treat each decision separately and in terms of how it affects a particular goal.[96]

---

[95] The Public Choice literature is based on this formulation. See, for example, Niskanen, *op. cit.*, in note 69; Dunleavy, *op. cit.*, in note 69. The assumption of rationality is clearly a simplifying model with numerous limitations, but these facts in and of themselves do not render models useless. For a summary of the limitations of the rationality assumption, see Donald R. Kinder and Janet A. Weiss, 'In Lieu of Rationality: Psychological Perspectives on Foreign Policy Decision-Making', *Journal of Conflict Resolution* (Vol. 22, No. 4, 1978), pp. 707-35; and Verba, *op. cit.*, in note 51. For a discussion of means-ends relationships, see Herbert Simon, *Administrative Behaviour* (New York: Free Press, 1976).

[96] Lindblom, *op. cit.*, in note 33.

1.4 Summary of Purpose

Competition between bureaucrats, each advancing their own preferences, is endemic in Whitehall. Scholars of British policy-making have recognized this fact. Thus, the question is not whether bureaucratic competition exists, but whether it has a real effect on foreign policy-making in Britain. This thesis looks for an answer in a particular case study, Esprit, by employing a reformulation of the Bureaucratic Politics perspective.

The perspective, as reformulated here, argues that civil servants wish to maximize their budgets, responsibilities and rank. The validity of this argument will be tested. One of the perspective's most important arguments is that a bureaucrats' preferences are determined by their position in the bureaucracy. The thesis will explore whether position is an adequate guide to preference formation among British civil servants involved in Esprit. It will also apply a refined concept of action channels in order to test whether they are an effective predictor of the means bureaucrats employ in pursuit of their preferences. Ultimately a judgment will be passed on the usefulness of the Bureaucratic Politics perspective in a study of British foreign policy-making.

Finally, this thesis hypothesizes that bureaucratic competition can have a real effect on British policy in Esprit under the following conditions: 1) when Ministers fail to articulate clearly consistent objectives to civil servants and when they fail to exert control and maintain scrutiny over the issue; and 2) when Whitehall mechanisms fail to control and coordinate activities within and across departments. Those hypotheses will be tested against the evidence.

1.5 Contribution to Foreign Policy Analysis and International Relations

Although Bureaucratic Politics is accepted as a core middle range theory in foreign policy analysis, it has substantial weaknesses that should be overcome. The above discussion suggested possible ways to strengthen the perspective. If these prove useful, this thesis will have advanced the perspective.

The application of the perspective has been limited. This study extends the Bureaucratic Politics perspective into areas not previously explored. Existing applications of the perspective have focused on discrete decisions of a military nature made by high level officials in response to an external stimulus that is often of crisis proportions. Application need not be limited to such situations. Bureaucratic Politics may be applied to issues of a non-military nature. Allison and Halperin discussed the relevance of Bureaucratic Politics to areas of non-military or strategic concern and suggested that the 'extension of the argument to other issue areas, e.g., foreign trade is

straightforward'.[97] The application is not as straightforward as they suggested, however, because sectoral policy-making involves low and middle level bureaucratic actors and private sector actors. Information technology, for example, is a knowledge-intense industrial sector where a relatively small group of academic and industrial researchers possess knowledge. Effective and appropriate government programmes in IT can not be made or implemented without the input of this small group of technical experts. The motivations of technical experts and their relationships with high, middle and low level governmental actors must be considered, thus expanding the application of the perspective to include actors other than those traditionally studied.[98] By exploring policy-making in IT, this thesis extends the perspective to decisions in a particular economic sector and to ones involving non-governmental actors.

The Bureaucratic Politics perspective has been limited to studies involving actors from one government only. Because so much policy-making now takes place in international settings, its usefulness would be improved if it is made capable of explaining decision-making on issues that involve bureaucracies of different countries or international organizations interacting with national bureaucracies. This study tests the perspective's ability in this regard by applying it to Esprit.

Although some studies have attempted to theorize the national dimension to policy-making in the EC, they often take national leaders or the executive branch of government to be the sole source of national policy preferences. Even the intergovernmental approach, which allows for sources of policy influence outside the executive, fails to theorize adequately the domestic political determinants of governmental action.[99] It does not give adequate consideration to the intragovernmental negotiations, bargains and coalition-building between bureaucrats that take place in the creation of national policy positions. Similarly, the interdependence approach to policy-making in the EC, which sees the Commission, member states' bureaucracies and various other interest groups competing and

---

[97] Allison and Halperin, *op. cit.*, in note 20, p. 47.

[98] High level actors include the Prime Minister, politically appointed Ministers and bureaucrats of Permanent, Deputy and Under-Secretary rank. Low level actors are bureaucrats holding a rank below Assistant Secretary. Relevant Whitehall Departments are the Department of Trade and Industry, the Science and Engineering Research Council, the Cabinet Office, the Ministry of Defence and Treasury.

[99] For a discussion of the limitations of the intergovernmental approach, see Carole Webb, 'Theoretical Perspectives and Problems' in Helen Wallace, *et. al.*, (eds.), *Policy Making in the European Community*, Second Edition (Chichester: John Wiley & Sons, 1989), pp. 23-28. For a summary of the arguments of intergovernmentalism, see Paul Taylor, *The Limits of European Integration* (Bechenham: Croom Helm, 1983).

collaborating with one another in a fragmented policy process where no single group dominates, does not explicitly relate bureaucratic behaviour to policy outcomes.[100]

Several studies have explored bureaucratic activity within the Commission, focusing on deviations from Weber's 'rational' bureaucracies by highlighting a malfunctioning of the Commission's bureaucratic machinery. Coombes, for example, argues that the Commission has become the staging ground for bureaucrats whose primary motivation has shifted from European integration to career advancement. Because of this reorientation, the Commission is unable to take a leadership role in new initiatives, but must settle with managing and implementing existing ones instead.[101] Poullet and Deprez suggest that compartmentalization among upper level commissioners results in the inability of Directorate Generals to coordinate their policies which, in turn, leads to fragmented and uncoordinated policy across the Community.[102] Michelmann suggests that the Commission's administrative problems are caused by its multinational membership, which results in too much diversity of style, tradition and practices among bureaucrats.[103] Allen and Byrne suggest that the implementation of EC policy and programmes faces similar problems that are found at the national level, bureaucratic resistance being one of them.[104] Kakabadse applies the Bureaucratic Politics model to explore the role of the Commission in the Tokyo Round of GATT negotiations and finds that bureaucratic processes paralyzed the Commission's negotiating capacity.[105]

These studies focus primarily upon the internal functioning of the Commission rather than on relationships between the Commission and member states' bureaucracies. This study sets out to explore the interaction between the British and EC bureaucracies, but it does so with the purpose of shedding light on British foreign policy making rather than explaining policy-making in the European Community.

---

[100] See, for example, Robert Keohane and Joseph Nye, *Transnational Relations and World Politics* (Harvard: Harvard University Press, 1970), p. xi; William Wallace, *Britain's Bilateral Links within Western Europe* (London: Routledge and Kegan Paul, 1984); and Webb, *ibid.*, p. 34.

[101] David Coombes, *Politics and Bureaucracy in the European Community* (London: Allen & Unwin, 1970).

[102] Edouard Poullet and Gerard Deprez, 'The Place of the Commission within the Institutional System' in Christopher Sasse, *et. al.*, (eds.), *Decision-making in the European Community* (New York: Praeger, 1977).

[103] Hans J. Michelmann, *Organizational Effectiveness in a Multinational Bureaucracy* (Farnborough: Saxon House, 1977).

[104] David Allen and Paul Byrne, 'Multilateral Decision-Making and Implementation: the Case of the European Community' in Steve Smith and Michael Clarke (eds.), *Foreign Policy Implementation* (London: George Allen & Unwin, 1985).

[105] Mario Alexis Kakabadse, *The Negotiating Role of the Commission of the European Community in the GATT Tokyo Round 1973-79*, PhD thesis, London School of Economics and Political Science, 1981.

The application of the perspective to Esprit involves an extended set of actors, on both the national and EC levels, and it involves consideration of decisions made during the implementation phase of policy-making. Although decisions made during the implementation phase of decision-making were of secondary relevance to Allison and Halperin,[106] foreign policy analysts have realized the importance of implementation and developed a perspective on how implementation affects foreign policy outcomes.[107] Although this study does not take an implementation approach *per se*, it does consider decisions following the single, non-military decision to fund Esprit.

This study also applies the Bureaucratic Politics perspective to British foreign policy-making. The Bureaucratic Politics perspective has been rejected as a useful tool for analyzing British foreign policy-making. This thesis questions that conclusion and heeds the following call from Steve Smith:

> ...in many ways the single most important task that a study of British foreign policy could perform for FPA would be to investigate the phenomena of bureaucratic and organisational politics at a variety of levels within government over a variety of policy issue-areas. As it stands, we simply do not know the extent to which they operate in the British case. We know the arguments for and against in the case of the United States (and even in the Soviet one!) but we, as FPA theorists, do not know the caveats that must be applied to the findings that come from over the Atlantic.[108]

In terms of foreign policy analysis more generally, this thesis makes two contributions. First, it tests the usefulness of applying a middle range theory, rather than trying to construct a general one, to foreign policy-making. Second, it explores how international factors and domestic factors combine to affect policy even though it takes as its basis a domestic level approach.[109] It does so by exploring how, and with what effect, governmental foreign policy machinery adapts to the demands of international bureaucracies. Esprit is an appropriate vehicle through which to trace adaptation because it spanned a decade, during which time a single political party held

---

[106] Allison and Halperin, *op. cit.*, in note 20, p. 57.

[107] For an overview, see Michael Clarke and Steve Smith, 'Perspectives on the Foreign Policy System: Implementation Appraoches' in Michael Clarke and Brian White (eds.), *Understanding Foreign Policy: The Foreign Policy Systems Approach* (Aldershot: Edward Elgar, 1989). See also David Lewis and Helen Wallace (eds.), *Policies into Practice* (London: Heinemann, 1984); Christopher C. Hood, *The Limits of Administration* (London: John Wiley & Sons, 1976); and Jeffrey L. Pressman and Aaron Wildavsky, *Implementation* (London: University of California Press, 1984).

[108] Smith, 'Foreign Policy Analysis', *op. cit.*, in note 21, p. 68.

[109] For a discussion on the increasing importance of international factors on British foreign policy-making, see Smith, 'Foreign Policy Analysis', *op. cit.*, in note 21; and Steve Smith and Michael Smith, 'The Analytical Background: Approaches to the Study of British Foreign Policy' in Michael Smith, Steve Smith and Brian White (eds.), *British Foreign Policy: Tradition, Change & Transformation* (London: Unwin Hyman, 1988).

office thus affording some consistency of political thought in Government, and because it was a vehicle through which the Community bureaucracy sought to increase its competence and responsibilities.[110]

The study also points to the need for further study of how international collective action is affected by implementation at the national level, the latter being at least partially a function of domestic politics. Although the focus is on the information technology sector, the findings may have implications for collaborative efforts in other areas, such as the European Fighter Programme or the European Space Agency. Further, while the study concentrates on British policy-making in Esprit, insights garnered here may be applied and tested in the cases of French and German policy-making in Esprit because those governments also implemented large national IT R&D programmes alongside Esprit.

1.6 Structure and Methodology

This thesis is organized chronologically. A chronological ordering enables a coherent and structured examination of numerous policy initiatives that occurred simultaneously in London and in Brussels and it allows this thesis to explore an evolution of policy-making that took place during the decade. Although a single party held office during the entire decade, its policies, particularly toward the economy and the European Community, were often ambiguous, inconsistently pursued and in flux. Further, although a single Prime Minster held office throughout the entire period, her authority waxed and waned during the decade. Her policies and policy style encouraged division and 'vacillation' at the centre of Government.[111] Finally, the Prime Minister shuffled her Cabinet frequently, particularly the DTI portfolio, making it difficult for a single Minister to establish authority within the department. These conditions of flux were certain to affect the nature of policy-making.

The thesis is divided into ten chapters. Chapter 1 has introduced the issue, discussed the theoretical framework and reviewed the relevant literature. Chapter 2

---

[110] Margaret Sharp suggests that Esprit marked the 'sea change' in Community policy-making that culminated in the signing of the Single European Act. Margaret Sharp, 'The Single Market and European Policies for Advanced Technologies', *The Political Quarterly* (Special Issue, 'The Politics of 1992', 1990), pp. 100-20. Hugh Ward and Geoffrey Edwards, 'Chicken and Technology: The Politics of the European Community's Budget for Research and Development', *Review of International Studies* (Vol. 16, No. 2, April 1990), pp. 111-29, argue that the Commission viewed Esprit as a means to draw more activity and responsibility to itself, increasing expectations and demands. See also Neil Kay, 'Industrial Collaborative Activity and the Completion of the Internal Market', *Journal of Common Market Studies* (Vol. 29, No. 4, June 1991), pp. 347-62; Claire Shearman, 'European Collaboration in Computing and Telecommunications: A Policy Approach' in Kenneth Dyson and Peter Humphreys (eds.), *Politics of the Communications Revolution* (London: Frank Cass, 1986).

[111] Clarke, *op. cit.*, in note 90, p. 263.

offers a brief history of UK IT policy and describes the Whitehall science and technology policy-making machinery Mrs Thatcher inherited. It discusses the major policies of Mrs Thatcher's first Government and how they were implemented in the Department of Industry (as the DTI was prior to Mrs Thatcher's second election victory). The emotive appeal of information technology during this period is highlighted. The Chapter then describes the structure and workings of the IT policy-making machinery that existed from 1979 to 1983.

Chapter 3 explores the origins of Esprit and the Alvey Programme. The actors involved, their interests and the processes by which decisions were made are of particular concern. The relationship between the two programmes is discussed. In Chapter 4, the implementation of the Alvey Programme is examined. During this period, the Department of Industry was reorganized numerous times and was assigned a rapid succession of Secretaries of State. The effects of such change are examined. Emphasis is given to the structure and operations of the implementing bureaucracy, the Alvey Directorate, and to the relationship between the Directorate and other Whitehall bureaucracies. Chapter 5 briefly discusses the funding decisions of the Alvey Directorate. Close attention is paid to the nature of the funding recipients and the technical areas supported. An exposition of action channels is provided.

Chapters 6 discusses British policy in Esprit from April 1983 to late 1984 while Chapter 7 explores it from late 1984 through 1985. In each Chapter, five hypotheses derived from the Bureaucratic Politics approach are tested. Those hypotheses primarily concern the occupational interests of civil servants, the nature of competition they faced, whether they chose action in Esprit that furthered their occupational interests and whether those actions were affected by action channels. It also judges whether bureaucratic competition had a real effect on Esprit and, if so, whether it was due to a lack of consistent Ministerial objectives, Ministerial control and supervision and to ineffective Whitehall control and coordination mechanisms.

Chapter 8 looks at the period from 1986 through 1987. This was a period of great uncertainty in the DTI. New Ministers arrived and slashed the DTI's budget for R&D. In Brussels, the Commission was marching relentlessly forward on the R&D front. Would bureaucrats abandon national R&D programmes, which now promised little in the way of budgets and responsibilities, and adopt European ones instead?

Chapter 9 chronicles the changes in the DTI brought about by a strong Secretary of State. The Alvey Directorate was disbanded and a new organization was given responsibility for Esprit. Chapter 9 also examines the Whitehall coordination structures and mechanisms that existed from 1988 to 1992. British policy in Esprit is examined in light of the new structures and relationships across the DTI and Whitehall. Chapter 10 concludes by judging whether this thesis' formulation of the Bureaucratic

Politics perspective is instrumental in explaining British foreign policy-making in Esprit.

This thesis is not an assessment of Esprit or the Alvey Programme nor is it an evaluation of British policy or policy-making in Esprit. Further, although it tells an interesting tale, its primary purpose is to shed light on how British foreign policy is made, how the process may be adapting to new demands placed on it from the European Community and sectoral issues and whether the Bureaucratic Politics perspective is a useful tool for British foreign policy analysis. To accomplish these goals, each Chapter presents information on the following: the interests of bureaucrats, the nature of the bureaucratic environment, the degree of Ministerial involvement and the effectiveness of Whitehall coordinating structures and procedures. Based on this information, five questions will be answered:

- Do bureaucrats work to maximize their budgets, rank and responsibilities?
- Must they compete with one another to do so?
- Does the preference-from-position function explain bureaucrats' objectives in Esprit? That is, can bureaucrats' behaviour in Esprit be explained by reference to their perceptions of how Esprit would affect their budgets, responsibilities and promotional prospects?
- Do action channels provide insight into the means by which bureaucrats pursued their objectives in Esprit?
- Does bureaucratic competition affect British policy in Esprit and if so, was it due to a lack of clearly articulated consistent Ministerial objectives, Ministerial control and supervision and to ineffective Whitehall control mechanisms?

To research British policy-making in Esprit, I relied primarily on interviews. Eighty-four interviews were conducted, the majority falling within a twenty month period from July 1991 to March 1993. Interviewees represented the major Governmental organizations (in Whitehall, Westminster and the European Commission), industrialists and academics active in IT as well as scholars in the field of European Community studies and British foreign policy-making. Much of the information gathered from interviews has never been recorded and hence represents a substantial and original contribution to the body of existing literature on British foreign policy-making, on the organization of the British Government for science and technology policy-making, on Esprit and on the operations of the European Commission. Because the bulk of information was obtained through interviews, it is useful to discuss in more detail the methods by which I chose interviewees and conducted interviews. This information is presented in Appendix A.

In addition to interviews, I used numerous other sources. Among them were publications of the Alvey Directorate and the European Commission, official Government documents and memoirs. Thanks to technological advances in document storage and retrieval (information technology), I was able to carry out an exhaustive survey of all pertinent literature relating to information technology, to Esprit, to the Alvey Programme and to all significant participants. Articles from the *Financial Times*, the *Economist*, *Electronics Weekly* and *Computer Weekly* were particularly useful secondary sources providing background information and corroboration of facts gathered during interviews. Greater detail on the literature search is also provided in Appendix A.

History and Evolution of British Information Technology Research and Development Policy-Making
Chapter 2

This chapter briefly describes the machinery of Government for policy-making in information technology research and development (IT R&D) and the state of IT R&D Mrs Thatcher inherited in 1979. It then turns to Mrs Thatcher's first term as Prime Minister and discusses her IT R&D policies and how they were implemented in the Department of Industry (DoI). It also assesses the nature of the leadership offered by Mrs Thatcher and her Secretary of State at the DoI. Finally, the structures and functioning of the Whitehall machinery for control and coordination of departmental IT R&D spending from 1979 to 1983 are described.

2.1 Structure of Government for Policy-Making in Research and Development

Modern government is organized according to a functional division of responsibility among departments. Research and development (R&D) contravenes this logic. R&D is not a function. It is a process; a creative, fluid evolution from learning to application. As such, R&D is not amenable to functional classification. Because R&D covers a broad spectrum of activity, it is not amenable to functional division either. When R&D is allocated across different departments,[1] fragmented and incoherent policy often results if strong coordinating mechanisms are absent. IT R&D policy in Britain has exhibited such fragmentation and incoherence.[2]

To redress the fragmentation and incoherence, the machinery of Government for R&D policy-making has been reorganized numerous times. Centralization failed: a single Minister or Ministry did not have the power to wrest control of R&D from other Whitehall departments. Decentralization failed: it led to policy fragmentation and incoherence.[3]

Under Mr Callaghan's tenure, responsibility for research and development policy was divided between the Science Group, which was led by the Chief Scientific

---

[1] Jeremy Tunstall and Michael B. Palmer, *Liberating Communications: Policy-Making in France and Britain* (Oxford: Basil Blackwell, 1990), identify nine Cabinet ministers with interests in R&D. Jill Hills, *Information Technology and Industrial Policy* (Beckenham: Croom Helm, 1984), adds numerous quasi-governmental agencies to the list.

[2] See Erik Arnold and Ken Guy, *Parallel Convergence: National Strategies in Information Technology* (London: Francis Pinter, 1986); Hills, *ibid.*; Tunstall and Palmer, *ibid.*; and Philip Gummett, 'The Evolution of Science and Technology Policy: A UK Perspective', *Science and Public Policy* (Vol. 18, No. 1, February 1991), pp. 31-37.

[3] See, for example, *Report of the Committee of Enquiry into the Organisation of Civil Science*, under the chairmanship of Sir Burke Trend (The Trend Report), Cm 2171 (London: HMSO, 1963).

Advisor and which was part of the Central Policy Review Staff, and the Secretary of the Cabinet. Reporting to the Secretary of the Cabinet was the Interdepartmental Committee on Scientific and Technical Information, which was comprised of departmental Chief Scientists and Permanent Secretaries. This committee had the monumental task of coordinating the science policies (including R&D) of all Whitehall departments and presenting Cabinet Ministers with scientific priorities that represented Government as a whole.[4] Mr Callaghan created an Advisory Council for Applied Research and Development (ACARD), comprised of industrialists and academics but located in the Cabinet Office, to improve relationships between Government and non-governmental organizations on applied R&D issues.[5] ACARD was also to advise Ministers on issues relating to applied R&D both domestically and internationally.

On international R&D issues, a single department, usually the DTI (or one of its manifestations) took the lead unless the Prime Minister took a personal interest.[6] The Foreign and Commonwealth Office had an interest in international research and development since the issues were often embroiled in larger foreign policy issues, but it was unable to play a lead or coordinating role because it lacked technically trained staff. Likewise, the Treasury was ill-equipt to play a major role.[7] This was the organization of Government for R&D policy-making that Mrs Thatcher inherited.

2.2 The State of Information Technology

Information technology has three component sectors: computers, microelectronics and telecommunications. From the 1960s to 1979, Government intervention shaped each of these sectors.[8]

From the 1960s to early 1970s, regardless of the party in office, Government sought to create a national computer champion and support it through public procurement. 'Buy British' was the policy and, after 1968 when the Government forced the creation of ICL, 'Buy British' meant 'Buy ICL'. This was so despite the fact that IBM, an American company, dominated the British computer market.[9] ICL's fortunes changed in 1974 when the Labour Government cut public expenditure and forced

---

[4] Mr Paul Channon, Minutes of Evidence, House of Commons Education, Science and Arts Committee, enquiry into Information Technology, HC107i, 14 December 1981.

[5] 'Applied' is the name given to research with a practial application as its objective. This is opposed to 'basic' research, which is entirely curiosity-driven, with no practial application as its objective.

[6] William Wallace, *The Foreign Policy Process in Britain* (London: Allen and Unwin, 1977), p. 147.

[7] *Ibid.*, p. 146; and Geoffrey Findlay, 'International Collaboration' in Robin Nicholson, *et. al.*, (eds.), *Science and Technology in the United Kingdom* (Harlow: Longman, 1991).

[8] For a comprehensive study of British information technology policy, see Hills, *op. cit.*, in note 1.

[9] Hills, *op. cit.*, in note 1, pp. 152-57.

departments to lease computers rather than buy them. ICL's strength was eroded and the national champion Mrs Thatcher inherited in 1979 was very weak.

The British microelectronics industry was likewise shaped by Government intervention. By the early 1970s, over 50 per cent of the microchips sold in Britain were imported despite the high tariffs Government placed on imports to protect the British microelectronics industry. The protective measures had an adverse effect: foreign microchip manufacturers moved to Britain and continued to control the British market. The three largest British microchip manufacturers (GEC, Plessey and Ferranti) were forced to quit producing standard chips altogether and concentrate instead on customized chips. (See Appendix C for a glossary of terms.)

Government support of British microelectronics manufacturers increased under Mr Callaghan. Numerous Whitehall departments channelled Government money to the sector through the 1975 Industrial Strategy. In addition, a company called Inmos, in which the Government held a 72.5 per cent share, was created to manufacture standard microchips.

On the telecommunications front, the Government decided in 1973 to award a British company the contract to install the country's switching system. The decision was ill-fated and by the early 1980s, the British telecommunications network was technically inferior to the systems operating in many other West European countries.[10]

Despite the weak state of the British IT industry, it was not short of Government funding for R&D. Several departments funded IT R&D. In 1977, the Science Research Council (SRC) funded the Distributed Computing Systems Programme of academic and industrial research and it organized a panel under the chairmanship of Mr Derek Roberts of Plessey to formulate a national programme of collaborative research in computing science and computer applications.[11] The strategy was not implemented, but the SRC did supply grants for industrially relevant academic research in microelectronics and it funded five university semiconductor processing facilities.[12]

The Department of Industry was highly involved in the sector because it administered most of the funds made available through the Industrial Strategy. The DoI created the Microelectronics Industry Support Programme (MISP), the Microelectronics Applications Project (MAP) and a number of smaller programmes in

---

[10] For a discussion of the government's decision to purchase the System X switch, see Hills, *op. cit.*, in note 1, pp. 130-46.

[11] Science Research Council, *Proposed New Initiatives in Computing and Computer Applications*, The Roberts Report, (London: Science Research Council, March 1979).

[12] 'The Role of the Science and Engineering Research Council in Information Technology', *Information Technology and Public Policy* (Vol. 2, No. 1, 1983), p. 24-29.

fibreoptics, optoelectronics and robotics.[13] The DoI administered this support with minimal oversight or interference from the Prime Minister or the Chancellor and with minimal coordination or consultation with other Whitehall departments that were spending on IT R&D.[14] Within the DoI, responsibility for information technology was contested and fragmented. MAP was administered by Mr Reay Atkinson and MISP by Mr John Major. Both gentlemen held Undersecretary rank and their jostling for position was well-known.[15]

The support administered by the DoI for industrial R&D paled in comparison to the Ministry of Defence's (MoD) spending on defence R&D, however. The British Government funded more defence R&D, as a percentage of gross domestic product, than any country other than the United States and the former Soviet Union.[16] In 1978, 33 per cent of total defence R&D went to electronics and microelectronics received a large portion of this.[17] Of the MoD's total spend on R&D, almost three-quarters went to microelectronics companies such as Ferranti, GEC-Marconi, British Aerospace, Racal and Plessey. Predictably, these firms switched most of their R&D from industrial to defence related work.

Government intervention had shaped the structure of the British IT industry. Mrs Thatcher inherited several industrial albatrosses (ICL and Inmos) and an outdated telecommunications switching system. Numerous Whitehall departments were channelling substantial amounts of Government funding for R&D to the IT sector, but each according to their own departmental priorities and strategies rather than according to a Whitehall-wide strategy. Consultation and coordination between the departments was minimal.

2.3 The Conservatives and Mrs Thatcher

In 1979 Britain elected a party whose leader was a self-proclaimed conviction politician with little sympathy for the consensual policy-making style of the post-

---

[13] National Economic Development Council, Information Technology EDC, *Policy for the UK Information Technology Industry* (London: NEDC, 1983), pp. 39-40.

[14] Keith Middlemas, *Power, Competition and the State*, Volume 3 (Houndmills: Macmillan, 1991), p. 89.

[15] *The Guardian*, 2 October 1978. Interviews, Dr John Thynne, 2 December 1992; and Mr Reay Atkinson. NOTE: When an individual was interviewed more than once, the date of the interview is placed next to the name. Otherwise, only the name of the interviewee appears in footnotes. This convention is followed throughout the thesis. For a full list and dates of all interviews, see Appendix B.

[16] House of Lords Select Committee on Science and Technology, *Civil Research and Development*, First Report, Session 1986-87, HL 20-I (London: HMSO, 1987), p. 167.

[17] Ken Guy, *UK Policies and Programmes in Electronics and Information Technology: A Report to the Alvey Directorate* (Brighton: Science Policy Research Unit, University of Sussex, 1986), p. 9.

Second World War Governments.[18] Mrs Thatcher compared herself to the Old Testament Prophets. According to her, the prophets did not say, 'Brothers I want a consensus'. They said, 'This is my faith, this is what I passionately believe. If you believe it too, then come with me'.[19] Although history may remember Mrs Thatcher as the 'Iron Lady', domineering, aggressive and unbending, her hold over the Party, Cabinet and the populace during her first term was tenuous and her Government's actions often abrogated the convictions she so zealously professed.

The zest with which she plunged into the affairs of Number 10 belied it, but Mrs Thatcher was apprehensive of her new position. She had not held an important office, she lacked experience and did not have a party united behind her monetarist cause. Careful not to ostracize her powerful critics (Prior, Walker, Carrington and Gilmour), Mrs Thatcher invited them into her first Cabinet. This did not, however, guarantee their loyalty. Mr Ian Gilmour, who went to the Foreign Office, 'never thought for a moment that the Thatcher experiment would last. The Thatcherite phase would be no more than an intermission, he thought, after which those to whom the Conservative Party historically belonged would reassume command. And Gilmour was not alone'.[20]

This precarious Cabinet was divided on many issues, including economic reform and foreign policy. The Conservatives were elected on a promise to reverse the economic decline of Britain. Although monetarist prescriptions (tax cuts, tightly controlled money supply, decreased Government spending) were to be the cure, the implementation of those medicines and their political side-effects (inflation and unemployment) were not well theorized. Working out the details of implementation on the job proved extremely difficult in the face of the worst recession to hit Britain since the Second World War. After two years, the economy was in trouble: gross domestic product had fallen 5.5 per cent; unemployment was at 2.7 million and rising fast; rioting had occurred in several cities. Several Cabinet Ministers began to lose faith. These 'wets', as they became known, wanted to abandon the monetarist cause and

---

[18] This discussion draws from the following: Hugo Young, *One of Us* (London: Pan Books, 1990); Peter Hennessy, *Whitehall* (London: Fontana Press, 1990); Peter Hennessy, *Cabinet* (Oxford: Basil Blackwell, 1986; Andrew Gamble, *The Free Economy and the Strong State* (Houndmills: Macmillan, 1988); Peter Clarke, 'Margaret Thatcher's Leadership in Historical Perspective', *Parliamentary Affairs* (Vol. 45, No. 1, January 1992); Peter Riddell, *The Thatcher Era and Its Legacy* (Oxford: Basil Blackwell, 1991); Michael Clarke, *British External Policy-making in the 1990s* (Houndmills: Macmillan, 1992); Dennis Kavanagh, *Thatcherism and British Politics* (Oxford: Oxford University Press, 1990); Middlemas, *op. cit.*, in note 14; Kenneth Baker, *The Turbulent Years: My Life in Politics* (London: Faber and Faber, 1993); Alan Clarke, *Diaries* (London: Weidenfeld & Nicholson, 1993); Nigel Lawson, *The View From No. 11: Memoirs of a Tory Radical* (London: Corgi Books, 1993); and Margaret Thatcher, *The Downing Street Years* (London: HarperCollins, 1993).

[19] Quoted in Gamble, *ibid.*

[20] Young, *op. cit.*, in note 18, pp. 138-39.

replace it with an incomes policy, the anathema to monetarism. Dissent was not limited to the 'wets'. Many Ministers loyal to the Prime Minister and/or to the monetarist cure (Heseltine, Biffen, Nott, Howe) began to question its wisdom. By July 1981, demoralization in Cabinet was 'endemic'.[21]

In September 1981, the Prime Minister determined to quell rebellion in Cabinet and sacked some of the Cabinet 'wets'. This did not, however, guarantee unity of purpose in the Cabinet nor did it confer upon her the complete backing of her Party. The 'wets' she sacked became more vociferous and the 1992 Committee of Conservative backbenchers challenged her authority. The words 'hung Parliament' were heard across Westminster and Whitehall.

Thus, although the Prime Minister was bristling with confidence and prepared to take painful steps toward the realization of her objectives, her Ministers and Party were apprehensive and cautious. Ministers were able to temper some of the Prime Minister's more radical instincts and even force her to accept policies against her will. (The Alvey Programme was such a case and is discussed in the next Chapter).

Mrs Thatcher's Cabinet was divided not only on economic policy, but also on foreign policy, particularly toward the European Community. Mrs Thatcher had very little foreign policy experience but she knew where she stood on the issue of Europe. Mrs Thatcher was instinctively skeptical of the European Community and the demands it placed on Government finances. Her Foreign Office Ministers did not possess the same antipathy and it was on the issue of Britain's contribution to the Community budget that Cabinet first overruled her. Even the Falklands War, which buttressed Mrs Thatcher's self-confidence and sent her popularity soaring, did little to improve her relationship with Cabinet. Cabinet was not united behind the Prime Minister's approach to the Falklands crisis.

The Prime Minister's response to the dissension and demoralization in Cabinet was to adopt a decision-making style much different from British Government tradition. (That tradition involved Cabinet debate, collective responsibility and Ministerial accountability.) She reduced the number of decisions that were taken in Cabinet.[22] Decisions were now taken by a small group, or 'inner' Cabinet, of hand-picked Ministers and advisers who shared her convictions (or, at least, were willing to follow her lead).[23] The nature of Cabinet debate changed as well. Cabinet became more of a discussion forum than a decision-making body.[24] In these discussions, she

---

[21] Young, *op. cit.*, in note 18, p. 204.
[22] See Hennessy, *Cabinet* and *Whitehall*, *op. cit.*, in note 18. See also George W. Jones, 'Cabinet Government and Mrs Thatcher', *Contemporary Record* (Vol. 1, No. 3, 1987), pp. 8-12.
[23] Hennessy, *Cabinet*, *op. cit.*, in note 18, p. 100.
[24] Anthony Seldon, 'The Cabinet Office and Coordination 1979-87', *Public Administration* (Vol. 68, Spring 1990), pp. 103-21.

often seemed 'more of an external pressure group on her Cabinet than the traditional resolver of its conflicting forces....'.[25] As the Prime Minister concentrated decision-making around herself, the principle of Cabinet collective responsibility and Ministerial accountability was threatened. Insiders talked of a 'devaluation of Cabinet government'. Her stridency and efforts to decrease the Cabinet's authority demoralized Cabinet more and 'perpetuated vacillation at the heart of government'.[26]

Discontent and demoralization were not limited to Cabinet: they spread to the civil service as well. Generally speaking, the civil service welcomed Mrs Thatcher's new Government. As Sir Ian Bancroft, head of the civil service in 1979, suggested, 'So in 1979 there was a positive welcome, on no party political grounds, for a new administration with a mandate, with firm policies and with a firm profile to it'.[27] The firm policies and firm profile civil servants hoped for did not materialize during the first two years of Mrs Thatcher's administration.

Compounding the lack of leadership with 'firm policies' and a 'firm profile' was the demoralization civil servants suffered at the hands of the Prime Minister. Mrs Thatcher harboured an inherent distrust of the civil service and its consensus-building ethos. She believed that painful, but necessary, action to curb Britain's economic decline had been avoided as a result of the conciliatory practices of the civil service.[28] As Hennessy remarks:

> in Mrs Thatcher's demonology, it is the protagonists of the failed Keynes-Beveridge consensus who have brought Britain low. And those with the biggest horns are the senior civil servants who assisted at the birth of that consensus and who had succeeded in capturing every Cabinet, Labour or Conservative, for its cause from the mid-forties till May 1979.[29]

Mrs Thatcher set out to 'Deprivilege the Civil Service'.[30] She by-passed many Permanent Secretaries, oversaw replacements for those who retired and brought young, hand chosen, civil servants not yet seeped in the traditions of the civil service into her inner circle. After several years of this, Mrs Thatcher was accused of politicizing the civil service.[31]

---

[25] *Economist*, 4 October 1980.
[26] Michael Clarke, *British External Policy-Making in the 1990s* (Houndmills: Macmillan, 1992), p. 16.
[27] Quoted in Young, *op. cit.*, in note 18, p. 155.
[28] For a discussion of the tradition of consensus-building, see Kavanagh, *op. cit.*, in note 18.
[29] Hennessy, *Whitehall*, *op. cit.*, in note 18, p. 632.
[30] Hennessy, *Whitehall*, *op. cit.*, in note 18, p. 628. This sentence was in the annex of a Cabinet committee paper discussing the strategies and priorities for the Conservative government.
[31] The Williams Committee cleared Mrs Thatcher of charges that she politicized the civil service, but did note that Number 10 was highly interested in appointments.

Mrs Thatcher was aggressive and domineering toward civil servants outside her inner circle. Her wrath was aimed particularly at civil servants in the Foreign Office. In Mrs Thatcher's view, Foreign Office officials were the epitome of consensus politics and, to make matters worse, they were pro-Europe. Mrs Thatcher reduced the Foreign Office's influence by, for example, bringing Sir Anthony Parsons to Number 10 as foreign affairs adviser and she dominated EC negotiations, often foiling the carefully laid plans of the Foreign Office. Officials in the foreign office despaired of the reputation for 'awkwardness' she earned Britain in Community negotiations.[32]

The Prime Minister sought to instill in the civil service the efficiency she associated with private enterprise. Soon after taking office, she created an Efficiency Unit in the Cabinet Office to evaluate the efficiency of the civil service and suggest reforms. The reforms, encapsulated in the Financial Management Initiative (FMI), were 'intended to melt and then alter the traditional culture of the Civil Service from top to bottom.'[33]

The FMI forced Ministers to take ultimate managerial responsibility for their Departments, in addition to their policy-making responsibilities in Cabinet and the committee and constituency work demanded of them as Members of Parliament. The ideals encapsulated in the FMI were not wholeheartedly endorsed by Cabinet or among civil servants. Ministers and civil servants alike had to 'wrestle with the contradictions of devolved responsibilities in a system whose accountability genes all reflected a genetic code in which the Minister was supreme and, for the health of democracy, had to account personally for every penny and every activity in Parliament'.[34] Mrs Thatcher's advocacy proved sufficient to drive the reforms through, but not without worsening the demoralization felt in the civil service.

The civil service strike added to the despondency in the civil service, but the icing on the cake came in November 1981 when Mrs Thatcher abolished the Civil Service Department. While the logic of the move may have been sensible, it symbolized the disregard with which the Prime Minister viewed the civil service. The civil service no longer merited the attention of an individual devoted entirely to it. It was now one of many responsibilities of the Cabinet Secretary.

Mrs Thatcher's objective was to change the ethos of the civil service and to impose political control over it. It may be argued that she succeeded in these objectives by the end of her tenure, but during her first term, she succeeded only in instilling a 'clammy air of mutual mistrust, as unsatisfactory to the mandarins as it was to the

---

[32] Stephen George, *An Awkward Partner: Britain in the European Community* (Oxford: Oxford University Press, 1990).
[33] Hennessy, *Whitehall, op. cit.*, in note 18, p. 605.
[34] Hennessy, *Whitehall, op. cit.*, in note 18, p. 616.

politicians, hung over the early dealings between Thatcherism and the government machine....'[35]

Demoralization of the civil service hindered the functioning of Whitehall, where 'more or less formally organized, meeting either regularly or irregularly as circumstances require, a network of interdepartmental committees and consultations on matters of external relations extends throughout Whitehall'.[36] This informal network was the linchpin in a Departmental system with a tendency toward fragmentation. It was through this informal network that Government-wide priorities were created from the disparate interests of the individual Departments. Mrs Thatcher's treatment of the civil service impaired this vital system.

2.4 The Department of Industry Under Sir Keith Joseph

Sir Keith came to the Department of Industry in 1979 armed with copies of Adam Smith's *The Wealth of Nations* for his civil servants to read. He had two objectives: get Government off the backs of industry, or 'roll back the frontiers of the state', and absolve bureaucrats of the power to make decisions that affected the state of British industry. He combined the two objectives into a clarion cry: he would proudly oversee the dissolution of the Department of Industry.

Given his often repeated objectives, bureaucrats in the Department of Industry waited for the axe to fall on their budget and on the interventionist ethos of Industrial Strategy.[37] The axe did not fall. In the face of the worst recession to hit Britain since the Second World War, Sir Keith was forced to abandon the economic philosophy he was moulding and preaching. Rather than rolling back the frontiers of the state, he rolled them forward in many cases.Government expenditure on trade, industry and energy doubled in real terms from 1978/79 to 1982/83. Even the instruments of intervention were kept. The National Enterprise Board, the epitome of Government intervention, was given a longer lease on life when it was combined, in 1981, with the National Research Development Corporation to form the British Technology Group.

Sir Keith was in a predicament. Given the potential political fall-out of the recession, he could not cut Government support to industry. At the same time, however, the architect of the blossoming Conservative philosophy could not blatantly continue the much maligned policies of the previous Government. The solution: Government support had to be repackaged in a manner that appeared, at least on the face of it, consistent with the developing Conservative economic philosophy.

---

[35] Young, *op. cit.*, in note 18, p. 230.
[36] Wallace, *op. cit.*, in note 6, p. 50.
[37] Middlemas, *op. cit.*, in note 14, p. 238.

To accomplish this, Sir Keith created a small unit in the DoI, the Policy Planning Unit, and gave them the task of redefining the Department's role.[38] As Mr Andrew Duguid, who at the time was Sir Keith's private secretary and a member of the unit, remarked, 'We were looking at the range of things to help Ministers answer the question: "What is the DoI for? What should it do?" The Department was looking for a new look, for a new face'.[39] Sir Keith allowed his civil servants a wide degree of latitude in repackaging their department's objectives, but he made one thing very clear: any recommendation that involved Government support for ailing firms in the manufacturing sector would be rejected.

Aware of the need to repackage Government industrial support, Mr Reay Atkinson, Head of the DoI's Information Technology Division, prepared a report on the Department's information technology programmes. Mr Atkinson, four of his Assistant Secretaries and the Policy Planning Unit deliberated for several months. They wished to increase their budgets and responsibilities and devise an ingenious way for Government to increase its support for information technology in a manner that did not blatantly contradict the fundamentals of the Conservative Party's emerging economic philosophy. In a document entitled 'A Strategy for Information Technology', they recommended that Government support British IT through public procurement and subsidies for research. The message may have been politically ingenious, but the choice of title was not. Lord Trenchard, Industry Minister, reportedly received the report, bellowing, 'What's this bloody nonsense? We don't have strategies in this government'.[40]

2.5 Information Technology Moves Up the Political Agenda

'A Strategy for Information Technology' presented the outlines of a possible Government policy toward IT and the force of its recommendations gained strength as Government came under fire for several highly publicized IT debacles. In early 1980, the second tranche of Government funding for Inmos had to be approved. The Government's stated policy was that it would reduce its stake in Inmos by bringing in private sector funds.[41] However, after seven months of acrimonious debate, Government agreed to inject another £25 million into Inmos. Mr Thatcher and her

---

[38] National Economic Development Council, memorandum by the Director General, *Industrial Policy in the UK* (NEDC (82) 25, 23 April 1982), Annex I, p. 12.
[39] Interview, Mr Andrew Duguid.
[40] Brian Oakley and Kenneth Owen, *Alvey: Britain's Strategic Computing Initiative* (London: Massachusetts Institute of Technology Press, 1989), p. 13; and Interview, Mr Reay Atkinson.
[41] For a statement of government policy, see Kenneth Baker, House of Commons debate, 18 July 1983, *Hansard* (Vol. 46, cols. 151-158).

Ministers were criticized, even by Conservatives, for 'picking winners'. (The Government finally sold its share of Inmos in July 1983.)

Government was on the blocks again in November 1980 when it tendered for a contractor to computerize the Inland Revenue's PAYE system. Newly negotiated GATT rules prohibited preferential purchasing by Governments from their own computer national champion. Government had to consider companies other than ICL, so it short-listed America's IBM and ICL, the latter by now on the brink of collapse. With the objective of keeping ICL afloat, Government awarded it the contract. The large contract did not cure ICL's problems and Sir Keith was forced to grant it a credit guarantee of £200 million. Labour and Conservatives alike again criticized Government of supporting lame ducks.

A single Member of Parliament, Mr Kenneth Baker, helped keep information technology on the political burner. Mr Baker had been Minister for the Civil Service from 1972 to 1974 under Mr Edward Heath and he had been head of the Central Computer Agency, an interventionist organization that instituted Britain's 'buy ICL' procurement policy. Mr Baker's interventionist credentials were well-known[42] and because he was associated with the 'Heath men' Mrs Thatcher banished him to the back benches.

While warming the back benches, Baker consulted for Logica, a successful British software house. He was committed to the IT cause and in June 1980 delivered a paper, written with the help of Mr Philip Hughes, Director of Logica,[43] entitled 'A National Strategy for Information Technology', to a conference on business telecommunications. Mr Baker called for a coherent, Government-led national IT strategy that included: a Minister for Information Technology in the DoI; a Government procurement policy that supported the British IT industry; Government-sponsored IT awareness campaigns; and a large IT R&D programme.[44] The similarity between Mr Baker's recommendations and the suggestions made by civil servants in 'A Strategy for Information Technology' is remarkable. Mr Baker circulated his paper widely. Mrs Thatcher received a copy and, on Mr Baker's insistence, visited Logica.[45]

Other Whitehall organizations joined the IT bandwagon. The Advisory Committee for Applied Research and Development (ACARD), a body that advised the Prime Minister and the Cabinet Office on R&D, undertook a study of whether the development and application of IT in the UK should be stimulated by Government. In its deliberations, ACARD consulted with civil servants from departments with an

---

[42] In 1976, he had called for a national strategy for computers. *Times*, 11 May 1976.
[43] Interview, Mr Kenneth Warren; and Oakley and Owen, *op. cit.*, in note 40, p. 10.
[44] For the text of his speech, see Baker, *op. cit.*, in note 18, Appendix I. See also *Times*, 19 June 1980.
[45] Baker, *op. cit.*, in note 18, p. 57.

interest in IT. DoI civil servants who had designed 'A Strategy for Information Technology ' no doubt recommended that Government should support IT. ACARD published it report, entitled *Information Technology*, in September 1980.[46] It argued that the commercial competitiveness of British industry depended on IT and it called attention to fragmented decision-making in Government and incoherent policies. Echoing Mr Baker's call for a Minister of Information Technology, ACARD recommended that one Minister and Government department should have responsibility for coordinating Government policy. ACARD also called for Government support of IT through public procurement and publicly funded R&D. Thus, from another quarter came the call for a national IT strategy that was very similar to that designed earlier by civil servants in the Department of Industry.

Before ACARD reports were published, the Prime Minister had to approve them. Thus, Mrs Thatcher must have approved, or at least been sympathetic to, the arguments for a Minister for Information Technology and Government support of the industry though R&D subsidies and public procurement.[47] If she was not firmly convinced of the merits of Government support for IT, the Chief Scientific Advisor in the Central Policy Review Staff (CPRS), Professor John Ashworth, pushed her in that direction. Although Mrs Thatcher was suspicious of the CPRS, she and Professor Ashworth developed a close relationship.

While Professor Ashworth was the Chief Scientist, Mrs Thatcher created an Official Cabinet Committee on Information Technology. He chaired this Committee.[48] Although it has not been officially acknowledged, it is possible that Professor Ashworth's Committee of officials shadowed and supported a Ministerial Committee on Information Technology.[49]

Professor Ashworth exerted pressure through the National Economic Development Council (NEDC) as well. In January 1981, the Electronics Economic Development Committee of the NEDC was reconstituted to include an Information Technology Economic Development Committee under the chairmanship of Professor

---

[46] Advisory Council for Applied Research and Development, *Information Technology* (London: HMSO, September 1980).

[47] Testimony of Dr A. Spinks (Chairman of ACARD), House of Lords Select Committee on Science and Technology, *Science and Government*, First Report, Session 1981-82, HL20-II (London: HMSO, 1982), p. 75.

[48] Interview, Professor John Ashworth. An 'Official' Cabinet Committee is attended by civil servants as well as ministers while a 'ministerial' Cabinet Committee is attended by ministers only. The Committee was later chaired by Mr Kenneth Baker (the Minister for IT) and then by Sir Robin Nicholson, Professor Ashworth's successor.

[49] Hennessy, *Whitehall, op. cit.*, in note 18, p. 640; and Hennessy, *Cabinet, op. cit.*, in note 18, p. 27.

Ashworth. The NEDC made several calls for a coherent policy toward the UK microelectronics industry.[50]

Five months after Mr Baker's speech and two months after ACARD's publication, Mrs Thatcher appointed a Minister for Information Technology in the DoI. Professor Ashworth claimed credit for persuading her to create the position.[51] At the time, Government was working on the Telecommunications Act in preparation for privatizing telecommunications. Professor Ashworth suggested to Mrs Thatcher that, 'This is really going to upset industry, so you need someone to go out and cheer them up'. The Minister for IT was that 'Minister for Good News' -- a public relations post. Mr Adam Butler was the first to hold the post, but only for two months. In January 1980, Mr Kenneth Baker took over. Mr Baker was a skilled publicist and he travelled the country preaching the miracles of IT and the necessity of Government support for IT.

Mr Baker greatly increased awareness of IT. A Government commissioned poll found that before 1982, 17 per cent of the population had heard of IT; after 1982, 62 per cent had.[52] The *Financial Times* even ran a competition to define information technology. The winning entry read: 'Information Technology is the modern method of getting to know as much about your business as your grandfather knew about his.'[53] Also submitted in the competition was the following limerick:

> Ken was a man of few airs
> And when Maggie answered his prayers
> She said with apology
> Try Information Technology
> They've already used Administrative Affairs.[54]

2.6 Back in the Department of Industry

Civil servants in the DoI interpreted Mr Baker's appointment as a desperate act of a desperate Government. They were not far off the mark. According to Mr Baker:

> This was the low point of the Thatcher years. There had been a bitterly unpopular Budget, unemployment was rising, factories were closing at a record

---

[50] National Economic Development Committee, *op. cit.*, in note 38; and National Economic Development Council (NEDC) Electronics EDC, *Policy for the UK Electronics Industry* (London: NEDC, 1982).
[51] Interview, Professor John Ashworth.
[52] Speech by Kenneth Baker to Barbican Conference, IT 82, reprinted in *Information Technology and Public Policy* (Vol. 1, No. 2, 1983), pp. 111-15.
[53] Baker, *op. cit.*, in note 18, p. 57.
[54] Baker, *op. cit.*, in note 18, p. 58.

> rate....The Cabinet was openly divided, the SDP racing ahead, Margaret Thatcher was dismissed as a one-term Prime Minister, and there was talk of a leadership challenge in October. So desperate was Number 10 that at the DTI [DoI] we had to devise a package of industrial support which she could announce in a censure debate in the House of Commons. The depths had been plumbed.[55]

In this package, Sir Keith gave in to requests from civil servant's call for increased funding for MAP and MISP. He promised £25 million to new awareness and applications programmes in fibreoptics and optoelectronics, £10 million to robotics and £34 million to IT in manufacturing. 1982 was declared the Year of Information Technology (IT82) and a £4 million national IT awareness campaign got underway. Government money supported IT for the blind, for small businesses, for dentists and for GPs. It helped design Offices of the Future and it financed over 100 Information Technology Education Centres.

It also implemented the two most important planks of Mr Reay Atkinson's 'A Strategy for Information Technology'. Sir Keith promised £80 million in support for research in information technology and it announced a new Government procurement policy for IT. Government was committed to 'continue to support British IT suppliers, in order to help them compete effectively'[56] through judicious and careful public purchasing.

For civil servants in the DoI, these decisions were a mixed blessing. Sir Keith was expected to emasculate their budgets and responsibilities, but he actually increased them. *From the point of view of larger budgets and increased responsibility, civil servants gained. However, this gain was off-set by an air of uncertainty and apprehension that pervaded the Department as a result of the huge gap between Sir Keith's words and actions.* The discrepancy was so great that the NEDC dared attribute an industrial policy to the Conservative Government, concluding that, 'While the Conservatives have not radically altered industrial policy legislation, there seems to have been a shift in emphasis from disengagement in the 1979-1981 period to a more active (or at least higher profile) industrial policy'.[57] Civil servants were anxious, knowing they were implementing programmes that were fundamentally opposed to the true objectives of their Secretary of State.

Christopher Johnson summarized the result: 'Mrs Thatcher's new broom, wielded at first by Joseph, made remarkably little difference to the broad lines of

---

[55] Baker, *op. cit.*, in note 18, p. 58.
[56] Department of Industry, *Government Response to the ACARD Report on Information Technology* (London: Department of Industry, September 1981).
[57] National Economic Development Council, Memorandum by the Director General, *op. cit.*, in note 38, Annex I, p. 12.

policy. It simply meant...the demoralization of civil servants who were made to feel that they were acting against her true beliefs'.[58] Middlemas suggested likewise. Officials in the DoI 'sometimes wondered whether he [Sir Keith] had not been planted on the Department to induce what Saki once called an "unrest-cure"'.[59]

2.7 Who is in Control Here?

The DoI was not the only department supporting IT R&D. The Science Research Council and the Ministry of Defence were as well. Each department was formulating and implementing its own policies without concern for coordination or a Government-wide strategy. The disjointed and uncoordinated nature of those efforts quickly became clear to observers. In the House of Commons, Mrs Thatcher was asked who was ultimately responsible for ensuring coordination. She responded: 'Ministers...are responsible for policy in connection with research and development within their own areas of concern. In appropriate cases I should play a coordinating role.'[60] The Inmos and ICL spectacles, which seemed to have no end, compounded this frustration in the Commons.

Government succumbed to the pressure and instituted six reforms to Government.[61] First, a committee of independent advisors, the Information Technology Advisory Panel (ITAP), was created to advise all departments on their IT policies. Second, a small unit called the IT Secretariat was established in the Cabinet Office.[62] The unit included three industrialists and was headed by Mr JB Unwin, an Under Secretary from the Treasury. The IT Secretariat reported to Mr Baker and to the Secretary of the Cabinet. It had a wide remit to coordinate IT policy across departments and it encouraged consultation between ITAP and the departments. Third, the DoI was reorganized where one Deputy Secretary, Mr Roy Croft, reporting to Mr Baker was responsible for all programmes concerned with Post, Telecommunications, Computers and Information Technology. (Responsibility for MAP and MISP was consolidated under one Under Secretary, John Major, when Mr Atkinson, the Under Secretary previously responsible for MAP, retired.) Fourth, the Central Computer Agency in the Civil Service Department was renamed and empowered to manage the

---

[58] Christopher Johnson, *The Economy Under Mrs Thatcher, 1979-1990* (Houndmills: Penguin, 1991), p. 183.
[59] Middlemas, *op. cit.*, in note 14, p. 238.
[60] Margaret Thatcher, House of Commons written answers, 29 October 1979, *Hansard* (Vol. 972, cols. 411-412).
[61] Department of Industry, *op. cit.*, in note 56.
[62] Testimony of Kenneth Baker, Minutes of Evidence taken by the Commons Education, Science and Arts Committee on Information Technology, HC 107i, 14 December 1981.

growing connection between computers and telecommunications. Fifth, the Interdepartmental Committee on Scientific and Technical Information staffed by departmental Chief Scientists and Permanent Secretaries and serviced by the IT Secretariat was reconstituted.[63] Sixth, the mechanism through which the DoI received advice from industry was amended. The Electronics Advisory Board, a organization comprised primarily of industrialists, was subsumed into the new Electronics and Avionics Requirements Board. Civil servants from the MoD, Science and Engineering Research Council, British Telecom and the DoI were to sit on the Board. Sir Robert Telford of GEC was named chairman.[64]

This was as far as Mrs Thatcher would concede to the forces criticizing her Government's management of IT. The Government's September 1981 response to the earlier ACARD report *Information Technology* argued that the new structures were sufficient to ensure interdepartmental coordination and coherent policy.[65] In fact, they were not.

The IT Secretariat was incapable of coordinating IT policy across departments. It was too small and its mandate overlapped that of the Cabinet Office Science Group and the Chief Scientist, Professor Ashworth, in the CPRS who had exerted strong influence in IT policy-making.

The Chief Scientist could not coordinate departmental efforts either: 'It was all very loose and there was no powerful coordinating machinery. It is the role of the Chief Scientist to coordinate, but the position is very ineffectual. All he does is play bureaucratic games and play one group off against another'.[66] The Chief Scientist was ineffectual for several reasons. First, he was a Deputy Secretary trying to force Ministers and Permanent Secretaries to coordinate their policies. Second, he was located in the CPRS, an organization Mrs Thatcher was rapidly downgrading. Third, he had no portfolio or budget of his own and was seen as powerless by other Ministers.[67]

Interdepartmental coordinating machinery was ineffective as well. For example, although the MoD Chief Scientist was supposed to sit on the DoI's requirements board, the House of Lords found that he did not.[68] Further, the DoI was not represented on the MoD's Defence Science Advisory Council as it should have been. Finally, the Interdepartmental Committee on Scientific and Technical Information did

---

[63] *Ibid.*
[64] Department of Industry, *op. cit.*, in note 56.
[65] Department of Industry, *op. cit.*, in note 56.
[66] Interview, Professor John Ashworth.
[67] Interview, Mr Kenneth Baker.
[68] Testimony of Sir Ronald Mason (Chief Scientific Advisor, Ministry of Defence), House of Lords, *op. cit.*, in note 47, p. 49.

not 'contribute much. It seems too unwieldy a body for the purpose' and its meetings were 'infrequent'.[69]

The Minister for Information Technology would not coordinate policy. He was concerned to protect his own IT strategy. Mr Baker was ambitious and departmental boundaries did not earn his respect. For example, in November 1981, Mr Baker made a foray into the Home Office's territory. He argued that responsibility for the radio frequency, personal communications and cable should be moved from the Home Office to the DoI. He was fended off by the Home Office Secretary, Mr William Whitelaw,[70] but his second attempt was more successful. He gained responsibility for regulation of the radio frequency.[71] Mr Baker also moved in on the territory of the Department of Education and Science (DES). He wished to see more technical and vocational training in schools, but was 'hamstrung by the slowness and reluctance of the DES to take any initiatives on technological education'.[72] He turned to Mr David Young, Head of the Manpower Services Commission, who agreed to help finance a £100 million programme for technical and vocational training in schools.

In November 1981, the House of Lords Select Committee on Science and Technology attacked the inadequacy of the machinery for science and technology policy-making in Government.[73] The Lords fell short of criticizing Mrs Thatcher directly, but their message was clear: 'The Prime Minister is her own Minister for Science and Technology and even though it is questionable whether a Prime Minister has the time to perform this function in the way a less preoccupied Minister might, nevertheless the role has been taken on.'[74] The Lords concluded that R&D policy resulted from different Ministers protecting their own interests and budgets and that policy was consequently incoherent. Stronger centralized coordination and responsibility for R&D were necessary.

The Lords recommended that the Chief Scientist be promoted from Deputy Secretary to Second Permanent Secretary rank and be moved from the CPRS to the Cabinet, thus reporting to the Cabinet Secretary and having a direct line to the Prime Minister. They called for the creation of a Cabinet level Council on Science and Technology to assess the strategies of all departments's R&D activities. Stronger machinery for interdepartmental coordination was also deemed necessary. Government

---

[69] Testimony of Sir Peter Carey (Permanent Secretary, Department of Industry), House of Lords, *op. cit.*, in note 47, p. 33.
[70] *Sunday Times*, 15 November 1981.
[71] This was a significant change given developments in the UK telecommunications market that were to follow the 1981 Telecommunications Act and privatization of British Telecom.
[72] Baker, *op. cit.*, in note 18, p. 62.
[73] House of Lords, *op. cit.*, in note 47.
[74] House of Lords, *op. cit.*, in note 47, p. 30.

needed to prepare an annual report on science and technology in the UK and produce an annual review of publicly funded research. Finally, the Lords called for a Minister of Science (not Ministry of Science) to be appointed at Cabinet level.

The Government's response was mixed.[75] It would not create a post of Minister of Science. Mrs Thatcher kept full responsibility for that portfolio. Government would not create a Cabinet Council on Science and Technology. Instead, the Advisory Board for the Research Councils would be empowered to coordinate basic and applied research, to consider the relevance of other countries R&D programmes and to assess UK international collaborative activities. Government would produce annual reviews of Government funded research and a new Cabinet committee comprised of departmental Chief Scientists and chaired by the Chief Scientist was created. The rank and location of the Chief Scientist would remain the same.

As regards international issues, the Chief Scientist had a 'general responsibility for co-ordination of international scientific and technological relationships' including representing the UK in the European Community's R&D budget negotiations. However, the centre lacked intimate knowledge of international issues. It was dependent on information that filtered up from departments. As the Lords suggested:

> Advice on S&T must be obtained internationally as well as at home. To some extent this is achieved on a hit-and-miss basis, relying on the international contacts of scientists (in or out of Government service), inter-Governmental meetings and the peripatetic habits of the Chief Scientists in CPRS, DoI and so on.[76]

Given the lack of political direction from the Prime Minister and Cabinet, the only two bodies able to clarify goals given the fragmentation of R&D across Whitehall,[77] departments independently formulated their own priorities in the international arena. The information they passed up to Cabinet was tempered by their own priorities. Possessing biased information and lacking effective structures and procedures, the Government's machinery could not perform the control and coordination role expected of it.

---

[75] *Government and Science: Government Observations on the First Report of the House of Lords Select Committee on Science and Technology*, Session 1981-82, Cm 8591, July 1982 (London: HMSO, 1982).

[76] House of Lords, *op. cit.*, in note 47, p. 13.

[77] Tunstall and Palmer, *op. cit.*, in note 1, p. 233.

2.8 Conclusion

Before 1979, the Government machinery for science and technology policy-making was reformed numerous times. Centralization followed decentralization, but fragmentation and lack of coordination remained the hallmarks. Mrs Thatcher inherited a rather shambolic system.

When the Conservatives were elected, they did not have an explicit agenda for R&D. Instead, R&D was subsumed within a larger philosophy for stemming the economic decline of Britain. Among the planned reforms were tax cuts, public expenditure control, 'good housekeeping' and strong leadership from the centre. Although the philosophy would be pursued with near religious zeal, a harsh recession and a divided Cabinet allowed only tentative application during the early 1980s. In the Department of Industry, many of the reforms were abandoned and the much maligned legacies of previous Governments continued. *A wide gulf between the rhetoric of Ministers and the reality of their actions opened.*

In the Department of Industry, *Sir Keith Joseph was unable to establish control.* Sir Keith let his suspicion of civil servants be known, but relied on them to formulate departmental spending priorities. *As Bureaucratic Politics would predict, civil servants maneuvered to increase their budgets and responsibilities.* Civil servants responsible for information technology were particularly successful in this. Despite larger budgets and responsibilities, civil servants were apprehensive. Their new budgets and programmes were fundamentally at odds with their Minister's economic and political philosophy and their Minister was skeptical of their abilities. *Apprehension and demoralization were endemic.*

In addition to the DoI, the SERC and MoD had budgets for industrial R&D. Priorities and actions of the three departments were not coordinated, however. *There was no strong, central organization or Minister capable of coordinating and controlling the R&D policies of individual departments.* Furthermore, the Prime Minister's reforms of the civil service had introduced such a degree of uncertainty and demoralization that the informal committee network of officials that traditionally assists with the coordination of policy across departments ceased to function effectively.

The Origins of Esprit and the Alvey Programme
Chapter 3

This chapter explores the genesis of Britain's Alvey programme and of the European Community's Esprit programme. The Alvey Programme was designed to make the British IT industry competitive with its Japanese and American rivals. Esprit had a similar goal, but it was to make the IT industry of the entire European Community competitive. Both programmes funded pre-competitive, collaborative research between industry and academia. Particular concern is given here to the relationship between the two programmes and to the interests of the actors involved in their creation.

3.1 Origins of Alvey

In the early 1980s, British IT firms were technologically and commercially weak relative to their American and Japanese counterparts. Britain's share of the world IT market paled in comparison. (See Table 3.1.) The British IT trade deficit, which had held steady during the 1970s, began to increase rapidly.[1]

Table 3.1: Share of World IT Market (%), 1981

Country	% Share
United Kingdom	4
France	6
West Germany	7
Japan	19
United States	47

Source: National Economic Development Council, Information Technology EDC, *Crisis Facing UK Information Technology* (London: NEDC, 1984), p. 3.

Mr Kenneth Baker, having worked his way into a Government post as Minister of Information Technology at the Department of Industry (DoI), was responsible for improving this state of affairs. Mr Baker believed the best way to save British IT was to encourage industrial joint ventures between British and Japanese firms.[2] In October 1981, he sent a delegation to Tokyo to explore the possibilities. The delegation was financed by the DoI, was led by Mr Reay Atkinson (Under Secretary of Information

[1] Department of Industry, 'A Programme for Advanced Information Technology: The Report of the Alvey Committee' (London: Department of Industry, 1982), p. 14.
[2] Interview, Mr Reay Atkinson.

Technology division) and included a Ministry of Defence (MoD) official and several academics.[3]

Officials from the Japanese Ministry of International Trade and Industry were not interested in Japanese/British industrial collaboration, but they were keen to bring several British academics into their ambitious collaborative research programme between Japanese Government, industry and academia in fifth generation (5G) computing.[4] British civil servants were shocked at the advanced state of Japanese IT and feared a brain drain if British academics were enticed to Japan.

The team of civil servants returned to London 'deeply shaken'[5] and united in the conviction that Britain needed its own 5G computing initiative bringing Government, academics and industry together if Britain was ever to remain internationally competitive in IT. The team prepared a report for Mr Baker and Sir Keith Joseph, Secretary of State at the DoI, arguing that British firms were unattractive joint venture partners and would remain so until Britain put its own IT house in order. A large, Government funded programme in 5G computing in Britain was necessary. Mr Baker was receptive to the idea so *civil servants responsible for IT in the DoI set out to design a large 5G programme proposal that was packaged in a politically acceptable form. Bureaucratic Politics would predict that their programme would afford them large budgets and responsibilities.*

It would not have been politically astute to recommend direct subsidies to industry. The Inmos and ICL debacles were causing a furor in Westminster. (See Chapter 2.) Subsidies for industrial research in IT seemed a more acceptable approach given the fact that Sir Keith had already agreed to allocate a small amount of DoI money for research.[6]

This prescription had to be massaged further to fit other political necessities. Generally speaking, research is undertaken in two environments and with two different objectives. Research that takes place in universities or research establishments and with no particular application in mind is called 'basic' research or 'pre-competitive' research.

---

[3] For a detailed discussion of the Tokyo mission, see Brian Oakley and Kenneth Owen, Alvey: Britain's Strategic Computing Initiative (London: Massachusetts Institute of Technology Press, 1989); and Leo Keliher, *Policy-Making in Information Technology: A Decisional Analysis of the Alvey Programme*, PhD thesis, London School of Economics and Political Science, 1987. Professors Brian Randell and Roger Needham were the two academics.

[4] The revolution from data processing and computation to knowledge processing is key to fifth generation computing. Fifth generation computers will offer direct communication between people and machines through pictures and speech, for example, and the system's behaviour will resemble human reasoning processes, such as association and inference.

[5] Interview, Mr Reay Atkinson.

[6] See Chapter 2. Interviews Mr Andrew Duguid, 27 November 1992; and Mr Oscar Roith, 19 November 1992. See House of Lords Select Committee on Science and Technology, *Science and Government*, First Report, Session 1981-82, HL20-I, p. 26 and HL20-II, pp. 46-57.

In contrast, research undertaken by industry with a particular commercial application in mind is called 'applied' research. Because Sir Keith and the Prime Minister were determined to 'get Government off the backs of industry', they felt that Government had no business funding industrial applied research. Sir Keith could, however, see some justification for funding basic research. As one civil servant suggested, 'There was no political or conceptual hang-up among Tory Ministers about this [basic research]. But when it came to applied research, the feeling was that industry should fund the work. Government funding of any research that industry should do was entirely an anathema'.[7]

Civil servants were worried that if Government supported basic research only, the Department of Education would be responsible for allocating the budgets rather than the Department of Industry. From the point of view of civil servants in the Department of Industry, this was unacceptable, so they devised a way to convince Ministers not to take this path. They argued that a severe imbalance between academic and industrial research would occur. This imbalance would harm the British economy. If, however, Government would support pre-competitive (basic) research *in industry*, the imbalance could be prevented. 'We developed an ingenious solution to convince non-interventionist Ministers that they had a role to play in solving this imbalance. The way we did this was to point out that there was an added value which could be got from Government funding of pre-competitive research in industry.'[8]

One obstacle remained. Ministers would never agree to fund research in industry, whether pre-competitive or applied, at a level of 100 per cent. Nor would Government agree to channel funds into a single company regardless of how the support was packaged. Civil servants found a way around these constraints: Government should fund collaborative, pre-competitive research in industry at a level of 50 per cent. In order for a company to receive Government support, it had to collaborate with another company or academic institution and it had to contribute 50 per cent of the research costs. Thus, although Government funding for industry was an anathema, civil servants packaged it in a form that allowed Sir Keith to channel money to industry without overtly abrogating Conservative philosophy.

The strategy now had to be sold to all civil servants in the Department of Industry, not just those who stood to benefit from the proposed programme

> Bureaucrats have a warm way of working with each other. There was no need at this point to involve Ministers in it. We went away to get consensus among

[7] Interview, Mr Oscar Roith. Not only were direct subsidies to industry an anathema to the Government, but they were also prohibited under GATT regulations and European Community competition rules.

[8] Interview, Mr Oscar Roith.

> officials and then we could present the finalized thing to the Minister. It was necessary to have consensus among the civil servants in order to give advice to the Minister so that he doesn't have to arbitrate between civil servants. IT had to be sold within the DoI.[9]

The Department was quickly convinced of the merits of the proposal. Now it had to be sold to Ministers. Again, it was not a difficult sell. As one civil servant put it:

> Ministers wanted to cut down support for industry. They were cutting money, but they did not want to loose the vote, so they could see a point in banging companies' heads together and get them to collaborate in pre-competitive research. Fifty per cent funding developed into a viable political solution and IT became acceptable politically.[10]

Mr Baker took the message to other Whitehall departments. The Science and Engineering Research Council (SERC) was quick to jump on board.[11] Before the Tokyo mission, Mr Laurence Clarke (Technical Director at GEC-Marconi and Chairman of the SERC Information Engineering Committee) had urged the DoI to create a 5G computing programme. The DoI was finally responding.

Mr Baker took the message to Downing Street. He organized a seminar on Information Technology, attended by the Prime Minister, at which the findings of the Tokyo mission were discussed and the need for a British 5G programme mentioned.[12] The Prime Minister was not overly enthusiastic, but she did not dismiss the idea out of hand.[13] Recall that at this time, Mr Baker, the Chief Scientist and ACARD were pressuring for a coherent Government IT programme and IT was high on the political agenda following the ICL and Inmos disasters. (See Chapter 2.)

Interpreting her response as tacit approval for a project of some kind entailing cooperation between Government and industry, Mr Alastair Macdonald, who had replaced Mr Reay Atkinson as Under Secretary of the DoI's Information Technology division, met with SERC officials.[14] They agreed the need to hold a 'town meeting' of industrialists to discuss the project. In preparation for the town meeting, officials from the DoI, SERC, MoD and British Telecom met and sketched out a £250 million collaborative, pre-competitive IT research programme, called IT87, that would be

---

[9] Interview, Mr Oscar Roith.
[10] Interview, Mr Oscar Roith.
[11] This was the renamed Science Research Council.
[12] Oakley and Owen, *op. cit.*, in note 3, p. 21.
[13] Interview, Mr Kenneth Baker.
[14] Mr John Major, Under Secretary of the DoI's Electronics Applications division, Mr Brian Oakley, Secretary of the SERC and Dr David Worsnip, Secretary of the SERC Information Engineering Committee were present.

jointly funded by the DoI, SERC, MoD and industry. The programme was in line with the strategy hammered out earlier by civil servants in the DoI. IT87 would cover two technologies: Intelligent Knowledge Based Systems (IKBS) and Very Large Scale Integration (VLSI). (See Appendix C for a definition.) Civil servants believed industrialists would warmly embrace IT87 at the town meeting, which was to be held at the Westmoreland Hotel near the Lords cricket ground.

Mr Baker addressed the town meeting, whose attendees were mostly industrialists. He left the impression that his Government was eager to contribute financially to a programme if industry would contribute as well. Industrialists agreed that a programme of some type was necessary, but decided that IT87 was not appropriate: it had been designed without their input. Mr Baker decided to form a committee, reporting to him, that would design a more appropriate programme. On 6 April 1982, the DoI announced that Mr John Alvey, Director of Technology at British Telecom, would lead a committee exploring possibilities for a national IT programme.

3.1a Alvey Committee Deliberations[15]

Mr Alvey was surprised to find that the membership of his committee had already been decided by Mr Baker, Mr Alastair Macdonald (Under Secretary of the DoI's Information Technology division) and Mr John Major (Under Secretary of the DoI's Electronics Applications division).[16] The committee included five civil servants, six industrialists and a lone academic who was added in hind-sight.[17] It was assisted by a number of smaller working groups. The committee's composition reflected the greater influence of the DoI relative to the SERC and MoD and of industrialists relative to

---

[15] For a detailed discussion of the Alvey Committee, see Keliher, *op. cit.*, in note 3.

[16] Interview, Mr John Alvey.

[17] Members included:

Mr J. Alvey, Senior Director Technology, British Telecom (British Telecom had not been privatized)
Mr I. Barron, Managing Director, Inmos
Mr C. Haley, Director Product Line Planning, ICL
Mr P. Hughes, CBE, Chairman, Logica Holdings
Professor R. Needham, Director, Cambridge University Computer Laboratory
Mr C. Read, Director, Inter-Bank Research Organization
Mr D. Roberts, Research Director, GEC
Dr K. Warren, Director Technology and Strategic Planning, Plessey
Mr B. Oakley, CBE, Secretary, SERC
Dr H. Davies, Deputy Controller Research Programmes, MoD
Mr A. MacDonald, Under Secretary, Information Technology Division, DoI
Mr J. Major, Under Secretary, Electronics Applications Division, DoI

academics. As Mr Oakley (a member of the Committee) remarked, and Mr Alvey confirmed, there was a 'revolt against academics'.[18]

Not only had DoI civil servants set the membership of Mr Alvey's committee, they also had in mind the design of the programme they wished to implement. It was very similar to the one they had called 'A Strategy for Information Technology', but with some of the interests of the SERC and MoD added. *It was a programme designed to increase their budgets and responsibilities.* The programme was to be jointly funded by Government and by industry, with each financing 50 per cent of the research costs, and it would support collaborative, pre-competitive research between industry and academia. Mr Baker had already signalled his approval of such a programme. Consequently, the Alvey Committee did not consider alternative programme formats.[19]

The programme looked as follows. Recall from Chapter 2 that R&D responsibilities were fragmented across departments and not coordinated. The Government was coming under attack for the resulting policy incoherence. Civil servants in the DoI understood that any funding regime permitting such fragmentation had little chance of being approved. Consequently, the DoI recommended that the Government's contribution to the programme should come from the three departments with IT research budgets: the MoD, SERC and DoI.

In terms of size, Mr Alvey originally had in mind a programme worth £100 million. *DoI officials on the Committee envisioned a more ambitious programme and suggested that Mr Alvey triple the recommended budget.*[20] The final proposal was for a five year (extendible to another five), £350 million programme. Three departments would contribute £200 million: DoI, £90 million; MoD, £60 million; SERC, £50 million. Academic research would be 100 per cent funded by Government while industry would contribute £150 million, thus meeting half the costs of research. (See Table 3.2.) For industrial projects where 'very wide dissemination of the results is required', the Committee recommended Government funding of 90 per cent of costs. This was clearly an industrial support programme, but one less overt than a 100 per cent subsidy or direct assistance.

Each of the three funding departments had something to gain from the 'Advanced Technology Programme' or 'Alvey Programme', as it was now called. Immediately prior to the Alvey discussions, the MoD was considering whether to fund a large research programme called Very High Performance Integrated Circuit (VHPIC). Because the MoD traditionally funded research at a level of 100 per cent of costs, the VHPIC would be a substantial drain on the department's budget. If the MoD

---

[18] Interview, Mr Brian Oakley, 25 February 1992.
[19] Interview, Mr John Alvey.
[20] Interviews, Mr John Alvey; and Mr Derek Roberts.

joined forces with the DoI and SERC, it could still fund VLSI research, but because the Alvey Programme was to be funded at a 50 per cent level, the MoD could save half the costs it would have incurred had it approved VHPIC.

The SERC was in the unenviable position of losing a large percentage of its IT budget. The 1981 SERC 'Forward Look' (a process whereby funding priorities for the next five years are decided) showed a large decrease in SERC funds for IKBS research.[21] The SERC was keen to maintain a presence in IKBS research. The Alvey Programme provided the opportune way for the SERC to pursue its IKBS interests in a time of decreasing budgets.[22]

The DoI was particularly keen on the Alvey Programme. *Civil servants wanted to protect their budgets, but their spending had to be consistent with Conservative philosophy.* The Alvey Programme was their prototype. Furthermore, *DoI officials were searching for a new identity and responsibilities in this changing political environment.* As Sir Robert Telford, who was to become chairman of the Alvey Steering Committee, suggested, civil servants in the DoI were looking for 'something to get hold of and do....That was important for the civil servants'.[23] The Alvey Programme afforded them this opportunity.

Table 3.2: Alvey Programme Funding Scheme

Contributor		Funding Level (£millions)
Government		
Academic Research	100%	50
Industrial Research	50%	150
Industry		150
Total Programme Cost		350

The programme would be divided into sub-programmes covering the following technologies: Very Large Scale Integration (VLSI) (often referred to as microelectronics or hardware), Intelligent Knowledge Based Systems (IKBS), Software Engineering (SE) and Man-Machine Interface (MMI). (See Appendix C for definitions.) Projects that demonstrated the results of research and educate the user in the benefits of IT would be funded as would some educational programmes and a communications system for programme management.

---

[21] Eric Arnold, *A Review of the Intelligent Knowledge Based Systems (IKBS) Programme*, Report to the Information Engineering Directorate, Department of Trade and Industry (Brighton: Science Policy Research Unit, 1988), p. 21.

[22] Interviews, Mr Kenneth Baker; and Dr David Worsnip.

[23] Interview, Sir Robert Telford.

Committee deliberations over how the money would be allocated across technology areas and how the programme would be managed were acrimonious. Representatives from the large hardware firms (GEC, Plessey and ICL), backed by the MoD, dominated representatives from small to medium sized firms active in software engineering and academics involved in MMI. As a result, the budget of VLSI dwarfed the other areas. (See Table 3.3.)

Table 3.3: Alvey Programme: Total Cost

Activity	Total (£millions)
Software Engineering (SE)	70
Very Large Scale Integration (VLSI)	90
Computer Aided Design for VLSI	25
Man-Machine Interface (MMI)	44
Intelligent Knowledge Based Systems (IKBS)	26
Communications	19
Large Scale Demonstrators	58
Education	20
Total	352

Source: Department of Industry, *A Programme for Advanced Information Technology: The Report of the Alvey Committee* (London: Department of Industry, 1982), p. 11.

As regards management, the Alvey Committee was divided into two camps. Industrialists wanted the programme to be run by a single individual, a 'superman', who was free of Government interference. *Civil servants, on the other hand, argued for a more complex implementing organization in which they had a large role.* Mr Derek Roberts described the split:

> Some members wanted a super individual. The DTI [DoI as it was then] would hand over all their money and that individual would have total right to manage it. John Major [a DoI civil servant] kept out of it for two discussions then said that this kind of arms length relationship was not acceptable to his Minister.[24]

Mr Major recommended a compromise solution.[25] The programme should be administered by a small directorate, located in the DoI, with 15 members seconded from the DoI, MoD, SERC and industry (none from academia) plus support staff. There would be one primary Director who was assisted by directors for the individual technology sub-programmes. The Committee envisioned that the civil servants from the DoI, MoD and SERC would 'provide a link with these departments'.[26]

---

[24] Interview, Mr Derek Roberts.
[25] Interview, Mr Derek Roberts.
[26] Department of Industry, *op. cit.*, in note 1, p. 11.

The Directorate was responsible to the DoI, but it would have a great degree of autonomy.

> We are convinced that the prime requirement is for a dynamic management style with the management being allowed a large measure of discretion....We propose that there should be a new Directorate with the authority and flexibility to expedite the programme and manage it effectively.[27]
>
> It is essential that the Director has under his own control all the resources and expertise needed to run the programme, particularly his own contract, finance and patent specialists, and his own office support; and that he has the freedom to recruit these staff as necessary. *To this extent the Directorate should be an autonomous unit within the DoI.*[28]

The director would be advised by a steering committee whose members would be chosen from the DoI's Electronics and Avionics Requirements Board (EARB). Advice would also come from numerous advisory committees answering to the director and the sub-programme directors. Despite the advisory structure, the director was to be given 'enough autonomy to get on and run the programme'.[29] To facilitate this autonomy, the Directorate had sole responsibility for establishing programme strategy and awarding contracts. No scrutiny would come from the three funding departments. The Committee did not make recommendations on the project approval process, on criteria upon which contracts would be awarded or on regulations for intellectual property rights.

3.2 Origins of Esprit

While Mr Alvey's Committee designed a national IT R&D programme, civil servants in the European Commission were creating a European IT R&D programme. The Commission had been working since the early 1970s to create a Science and Technology Community,[30] but the catalyst for Esprit was the work of the 12 person Forecasting and Assessment in the Field of Science and Technology (FAST) secretariat in Directorate General XII (Science, Research and Development) of the European Commission. The FAST secretariat was created by the Commission in 1978 to explore

---

[27] Department of Industry, *op. cit.*, in note 1, p. 51.
[28] Department of Industry, *op. cit.*, in note 1, p. 53. Emphasis added.
[29] Department of Industry, *op. cit.*, in note 1, p. 11.
[30] For a history of 1970s Community efforts on the field of science and technology and their failures, see Margaret Sharp and Claire Shearman, *European Technology Collaboration* (London: Routledge and Kegan Paul, 1987); Margaret Sharp (ed.), *Europe and the New Technologies* (London: Francis Pinter, 1985); and Stephen Woolcock, 'Information Technology: the Challenge to Europe', *Journal of Common Market Studies* (Vol. 21, No. 4, June 1984), pp. 515-31.

structural change in the EC. It had concluded that Community growth was dependent upon support for new, sunrise industries, particularly IT, rather than for declining industries such as steel. In 1980, FAST explored Community needs in 'long lead-time R&D' and recommended a European Strategic Programme for R&D in Information Technology (Esprit).[31]

Viscount Etienne Davignon, the Commissioner for Industry, began to work with members of the FAST group dealing with IT issues. He renamed the group the Information Technology Task Force (ITTF), expanded its membership to include career bureaucrats and experts on temporary contract and physically moved it 'temporarily' to his Directorate General (DGIII - Industry). At this point, the ITTF had a nebulous existence. It was independent of all Directorate Generals, but was responsible to Viscount Davignon.

In 1980, Viscount Davignon invited directors of the twelve largest European IT firms to a roundtable discussion on the state of European IT.[32] These companies were subsequently referred to as the 'Roundtable 12' or simply the 'Twelve'. At the meeting, Viscount Davignon stressed the dismal state of European IT and suggested that the Twelve collaborate in manufacturing. The Twelve were concerned to increase their competitiveness, but were unwilling to sacrifice their individual manufacturing strengths for the larger good. Viscount Davignon subsequently readjusted his strategy, arguing for collaboration in an area that was not so commercially sensitive: pre-competitive research. The shift in emphasis served two functions. First, Community competition law and GATT regulations allowed subsidies to firms undertaking collaborative projects that were not 'close to the market' -- ones of a 'pre-competitive' nature. Second, because pre-competitive research was removed from core business activity, firms were more willing to collaborate and perhaps allow the Commission to play a leading role.[33]

Viscount Davignon asked the Twelve to design a strategy in collaborative pre-competitive research. In very close consultation with Commission officials in the ITTF, Roundtable representatives (now referred to as the Steering Committee) and over 100 technical experts, primarily from industry, gathered in Brussels to design a programme.

Many of the British representatives were members of the Mr Alvey's Committee or its working groups. Thus, they were simultaneously involved in designing Esprit and the Alvey Programme. In the area of VLSI, for example, 'there

---

[31] Forecasting and Assessment in Science and Technology, The FAST report of 1982, reprinted as *Eurofutures: the Challenges of Innovation* (London: Butterworths, 1984).

[32] The companies included: Bull, Thomson, CGE (France); Siemens, Nixdorf and AEG (Germany); GEC, ICL and Plessey (UK); Olivetti and STET (Italy); and Philips (Netherlands).

[33] House of Lords Select Committee on the European Communities, *ESPRIT*, 8th Report, Session 1984-85 (London: HMSO, 1985), p. 169.

was a one-to-one correspondence between Alvey and Esprit working parties'.[34] Mr Derek Roberts chaired the working party that designed the Alvey VLSI sub-programme. This working party was comprised of three senior industrialists from Plessey, Ferranti and GEC. Together with Mr Roberts, these men also sat on the Esprit VLSI working party. Mr Roberts suggested that in the Alvey VLSI working party,

> we would have to keep reminding ourselves whether we were working on a UK joint venture or whether we were putting UK input into Esprit. I used the Esprit VLSI paper that was done with Thomson and Siemens and then we edited out the commercial concerns of theirs. The quickest way to generate the Alvey paper was to go through the Esprit paper and edit out the things that had to do with Siemens or Thomson.[35]

And, 'while every attempt was made to appear otherwise, they [Alvey and Esprit VLSI] were identical programmes'.[36]

A similar phenomenon, but in reverse order, happened in the Alvey software engineering sub-programme. Mr Philip Hughes of Logica chaired the Alvey software engineering working party and he also designed the Esprit software engineering sub-programme. Mr Oakley, a member of the Alvey Committee, suggested that, 'Philip Hughes set the Alvey and Esprit software programmes despite the fact that he was outnumbered by French and Germans in the Esprit working groups. He took the Alvey documents and used them in Brussels even as they were maturing them in Alvey'.[37]

On 25 May 1982, the Commission submitted a discussion document to the Council entitled 'Towards a European Strategic Programme for Research and Development in Information Technologies'.[38] The document called for a 11.5 million ECU (approximately £6.5 million) two year pilot programme, beginning in January 1983, to precede the larger Esprit programme. The Commission envisioned that the Esprit programme would run from 1982-1992 and subsidize collaborative, pre-competitive research across the Community in five technical areas: advanced microelectronics, advanced computing, software technologies, office automation and integrated computer systems.

Esprit would help European IT become competitive by reversing the Community's dependence on US and Japanese imports, encouraging standards of

---

[34] Interview, Mr Derek Roberts.
[35] Interview, Mr Derek Roberts.
[36] Interview, Mr Derek Roberts.
[37] Interview, Mr Brian Oakley, 2 June 1992.
[38] Commission of the European Communities, 'Towards a European Strategic Programme for Research and Development in Information Technologies', Com (82) 287 final (Brussels: Commission of the European Communities, 25 May 1982).

European origin and reducing the inefficient and wasteful duplication of national research programmes. While the Commission argued that national programmes in IT were ineffective, it pledged that Esprit would not compete with or replace national programmes. 'Esprit will thus not be in competition with national programmes; it will, on the contrary, reinforce them and make them more effective'.[39] In addition to Britain's Alvey Programme, the French and German governments were implementing national IT R&D programmes similar to Esprit. The Commission was aware that Member State governments would not allow their national programmes to be replaced by a European one.

The Commission's proposed management structure was remarkably similar to that of the Alvey Committee.

> A programme of [this] nature...will be highly complex to prepare and execute....Programme management will have to be: very flexible to take account of the fact that the IT sector is subject to a rapid rate of change and very efficient to ensure the participation of many small companies active in the field, which must not be discouraged by bureaucratic procedures leading to high overheads.[40]

For these reasons, the ITTF would implement the pilot phase. The ITTF would take advice from a Steering Committee, which was made up of the Roundtable companies, and five working groups. Lessons learned from implementation of the pilot phase would be incorporated into the implementation of the Esprit programme. Governments of member states would have little role to play in the implementation of the Esprit pilot phase.

Inevitably, the Council of Ministers haggled over the pilot phase's price tag. Mrs Thatcher's crusade for a rebate of £1 billion from Britain's contribution to the Community budget was in full swing. By May 1982, when the Commission submitted its call for the Esprit pilot phase to the Council, relations between Britain and other members of the Community had reached their nadir.[41] Mrs Thatcher was holding up agreement on agricultural prices for the 1982-83 Community budget and had linked this issue to the larger issue of budgetary reform. To force the Council's hand, the Commission published an advance call for Esprit pilot projects in the *Official Journal* of October 1982 (the report of the Alvey Committee was also published in October).[42] The Council finally acquiesced and approved the pilot phase on 21 December 1982 at

---

[39] *Ibid.*, p.16.
[40] *Ibid.*, p. 19.
[41] Stephen George, *An Awkward Partner: Britain in the European Community* (Oxford: Oxford University Press, 1992), p. 150.
[42] *Agence Europe*, 21 October 1982, p. 11.

the requested funding level of 11.5 million ECU. In February 1983, the Commission published its formal call for proposals, drawing over 200 proposals from 600 companies, academic and research establishments. The Commission quickly allocated all 11.5 million ECU to 38 projects. Not surprisingly, about 70 per cent of the funds went to the 12 Roundtable companies whose officials had helped design the pilot phase.

3.3 Esprit in the Alvey Committee

While the Esprit pilot phase proposal awaited Council approval, the Alvey Committee prepared its final report. Civil servants from the DoI had the important task of writing the report. Although short on detail, the report was a masterpiece of political acumen and it revealed the competition civil servants felt toward the Commission and toward Esprit.

In the numerous meetings of the Alvey Committee, discussion of Esprit was kept to a minimum despite the fact that the two programmes were proposing to fund virtually identical areas of research and despite the fact that the companies involved in the Alvey discussions were simultaneously involved in Esprit discussions. When asked why discussion of Esprit was minimal, Professor Needham suggested that, 'Esprit was regarded as interesting, but not important. It was pretty clear...what we had gone there to do. Knowing what we were there to do, it was clear that the Community was doing something else'.[43] Mr Alvey answered that discussion of Esprit would have distracted the Committee from its main purpose.[44] He admitted that the Committee deliberations were 'extremely insular' and that 'We were like ostriches putting our heads in the sand.'

Another explanation of the insularity of the Alvey Committee deliberations exists. *It lies in competition between civil servants in the DTI and Brussels.* Industrialists active on the Alvey Committee participated in Esprit deliberations, but Viscount Davignon had excluded civil servants from the Member States from the important discussions. He felt that if civil servants were included, industry would be less enthusiastic and discussions would get bogged down in a bureaucratic morass.[45] Civil servants on the Alvey Committee responded by excluding members of the ITTF from their deliberations and Esprit from consideration. As Mr Oakley suggested, 'We deliberately kept the Commission out of the planning of Alvey. It was childish actually.

---

[43] Interview, Professor Roger Needham.
[44] Interview, Sir John Alvey.
[45] Interview, Mr Virgilio Pasquali.

We [civil servants] knew that we wanted to create a UK programme and we purposively played down Europe'.[46] Mr Derek Roberts agreed:

> The UK civil servants, and I am sure that they will deny this now, at the time were anti-Esprit because they were not involved in the Esprit negotiations. Esprit was driven by industry through the industrial Roundtable of which I was a member. There was initial antagonism in the DTI. They were not happy because they kept being left out. They felt that it was effectively UK money being spent on UK firms but being filtered through Brussels. And they were not in a position to influence how it was spent.[47]

In a less straight forward fashion, Mr Macdonald alluded to the antagonism between the DoI and the Commission: 'There was skepticism as to whether the Commission could get its act together. Before Esprit began working, everyone here was thoroughly skeptical of whether bureaucrats in Brussels could manage a collaborative effort of this size. We wondered if they were biting off more than they could chew.'[48] Another official from the DTI, Dr Margaret Sharp, who is now an expert on Community IT programmes, confirmed that general attitude in the DTI toward Esprit was that hopefully Esprit 'would fall flat on its face'.[49]

Civil servants in the DoI perceived Esprit as a threat to their Alvey Programme. As Mr Macdonald put it, 'There was definitely competition between the two. There were two cooking pots on the stove at once and the gas could have been turned off on either one or both of them'.[50] Mr Atkinson concurred: 'In the early days, Alvey would be Alvey and the European counterpart would be almost rivals....What we were out to do, pure and simple, was to put the UK IT industry in a position where we could compete effectively in developments in IT. Europe just did not enter into it.'[51]

Both programmes would be presented for Ministerial approval at nearly the same time, thus increasing the likelihood that Ministers would realize the potential for duplication of effort and waste of public money. The two programmes were strikingly similar. Esprit was wider in scope than Alvey, but both programmes focused on VLSI, artificial intelligence (called IKBS in Alvey and Advanced Information Processing in Esprit) and software engineering. Both were designed by and primarily for large firms such as GEC, Plessey and ICL, making it likely that one research project could be

---

[46] Interview, Mr Brian Oakley, 2 June 1992.
[47] Interview, Mr Derek Roberts.
[48] Interview, Mr Alastair MacDonald, 21 January 1992.
[49] Interview, Dr Margaret Sharp.
[50] Interview, Mr Alastair Macdonald, 21 January 1992.
[51] Interview, Mr Reay Atkinson.

supported through two different sources, thus undermining Alvey's 50 per cent funding formula and giving British industry a windfall of Government support.

If Ministers dismissed the potential for duplication, certainly they would see that the Alvey Programme and Esprit were working at cross-purposes. Alvey was designed to protect British firms from foreign competition -- including European companies with whom British firms would be collaborating in Esprit. Moreover, DoI officials feared that Mrs Thatcher would use Alvey as a test-case of her resolve. She had been forced into a number of embarrassing U-turns and by rejecting Alvey and approving Esprit, she could have her cake and eat it. She could signal her resolve to roll back the frontiers of the state yet at the same time assist British IT on the sly through funds from EC coffers. *From the civil servants' point of view, Esprit was clearly a threat to their Alvey Programme.*

DoI officials who wrote the Alvey Committee report walked a fine line. They had designed an essentially interventionist programme that would increase their budgets and responsibilities. In order for it to be approved, they had to play down the interventionist nature of the Programme while simultaneously emphasizing elements to which Ministers might be more sympathetic. They presented Alvey as necessary for Britain's economic revival. Esprit, on the other hand, was portrayed as a threat to the British economy and as evidence of the Commission's relentless advance into areas of national competence. (The latter could always be expected to incense the Prime Minister.)

The report suggested:

> The US, Japan and countries in Europe are now all mounting programmes comparable to the one we propose for the UK. These rival programmes present a serious challenge to the UK, which we must face. The EEC Esprit programme is complementary to the programme we propose.[52]

> A collaborative UK programme...would assist in feeding in the UK input to any EEC programme, not least by widening the range of potential UK participants to include the small and medium sized businesses which would otherwise tend to be excluded. Whatever the potential value of Esprit, we are clear that it is not a substitute for a UK programme; rather a UK programme would help us participate more effectively in any European one.[53]

Mr Macdonald suggested that these were 'nice ways of saying that we will go on plowing our own furrow.'[54] Mr Oakley also remarked on the references:

---

[52] Department of Industry, *op. cit.*, in note 1, p. 11.
[53] Department of Industry, *op. cit.*, in note 1, p. 20.
[54] Interview, Mr Alastair Macdonald, 21 January 1992.

> We [civil servants] knew that we wanted to create a UK programme and we purposively played down Europe even though firms were playing it both ways. We put a pious reference about keeping a balance between the two, but we essentially planned Alvey as if Esprit did not exist. Culturally, Alvey was more important than Esprit.[55]

Despite the opportunity for duplication of effort, the Alvey Committee report did not establish any means by which the two programmes could be coordinated. In fact, the Alvey Committee did not consider the issue.[56] Mr Derek Roberts recalled:

> When people were formulating programmes for Alvey and Esprit, they [civil servants] were having to play one off against another. Sensible cross-referencing was not possible. It was unsatisfactory that Esprit and Alvey were in the formative stage together. It would have been better if Alvey came first and Esprit later, or vice-versa. At the civil service level, that restricted cross-referencing.[57]

In their attempt to present their Alvey Programme in a favourable light, civil servants inadvertently established future policy in Esprit in a single sentence: 'The EEC Esprit programme is complementary to the programme we propose.[58] The Alvey Programme was the primary, fixed policy object: Esprit was secondary and malleable. (More on this in Chapters 6 and 7.)

3.4 Alvey in Cabinet

The Alvey Committee presented its report to Mr Baker in September 1982. It was now up to him to sell an interventionist programme to a Prime Minister who was suspicious of his spending propensities. Mr Patrick Jenkin, who had replaced Sir Keith as Secretary of State at the DoI, suggested that 'in the Cabinet Office, his [Baker's] name was mud'.[59] Nevertheless, Mr Baker relished the opportunity. He had fashioned his own Ministerial post and gained much publicity through IT82, but Alvey would be tangible proof of his ability and a step up the ladder to higher office.

Because Mr Baker was a junior Minister, he did not have a seat in Cabinet, so he had to exert pressure from other directions. He convinced the Parliamentary

---

[55] Interview, Mr Brian Oakley, 25 February 1992.
[56] Interviews, Sir John Alvey; Mr Brian Oakley, 2 June 1992; Mr Alastair MacDonald, 21 January 1992 and 28 October 1992; and Mr Roger Needham.
[57] Interview, Mr Derek Roberts.
[58] Department of Industry, *op. cit.*, in note 1, p. 11.
[59] Interview, Lord Patrick Jenkin.

Information Technology Committee to lobby on the Programme's behalf.[60] He also worked through the Information Technology Advisory Panel (ITAP), from which Mrs Thatcher took advice on IT matters. Because Mr Baker was ITAP's chairman, it was a foregone conclusion that ITAP would press Mrs Thatcher to approve the Alvey Programme.[61]

Mr Baker influenced high level civil servants from other Departments through Mr Roy Croft, Deputy Secretary in the DoI responsible for all information technology issues. Mr Croft chaired the interdepartmental committee that coordinated IT policy across Government. Although Mr Croft was originally skeptical of Alvey, he was won over and, with the support of his Permanent Secretary, Sir Peter Carey, he pressured other senior Whitehall officials to support the Alvey Programme to their Ministers.[62]

Mr Baker's most important asset was his Secretary of State, Mr Patrick Jenkin, one of the 'wets'. Upon taking office, Mr Jenkin produced a short paper, entitled *Strategic Aims*, calling on DoI officials to reformulate their aims and objectives (yet again).[63] The result was another repackaging of Government support rather than an overhaul because, as Middlemas suggests, 'Jenkin made it discreetly clear that he believed industrial markets could not work adequately without selective intervention'.[64] The DoI's new strategy was a mix of new-style intervention and old style support. Funds were no longer to be given for regional assistance, to the National Enterprise Board or directly to individual firms, but instead were channelled to high technology research and development, biotechnology and microelectronics, telecommunications, fibre optics and robotics.[65] Innovation, efficiency and enterprise were the politically correct words used to describe the 'industrial policy but without a name [that] broke out of its confines and began a mutation of its own'[66] under Mr Jenkin. Mr Jenkin became a strong advocate of the Alvey Programme because it exemplified his industrial strategy.

Mr Jenkin included the Alvey Programme in the industrial strategy budget that he took into his first round of public expenditure negotiations. Mr Geoffrey Howe, Chancellor of the Exchequer, approved funding for Mr Jenkin's industrial strategy, but

---

[60] Interview, Sir Michael Marshall.
[61] Oakley and Owen, *op. cit.*, in note 3, p. 53.
[62] Interview, Sir Robert Telford.
[63] Department of Trade and Industry, *Strategic Aims* (London: Department of Trade and Industry, 1983).
[64] Keith Middlemas, *Power, Competition & the State*, Volume 3 (Houndmills: Macmillan, 1991), p. 355.
[65] For figures on industrial support programmes, see M. Sharp and G. Shepherd, *Managing Change in British Industry* (Geneva: International Labour Office, 1987). Funding was channelled to high tech areas through the Department's 'Support For Innovation' scheme.
[66] Middlemas, *op. cit.*, in note 64, p. 355.

recommended that Alvey be negotiated at a later date.[67] Mr Howe said that he 'did not want to engage in fisticuffs now, but this [Alvey] was basically a dead duck'.[68] The Treasury and Number 10 apparently saw Alvey as a 'huge white elephant', another Concorde, but Mr Jenkin had the backing of several Ministers who had lost faith in the Prime Minister's painful monetarist prescriptions for economic recovery. Among them were Mr Michael Heseltine (Welsh Department), Mr Keith Joseph (Department of Education), Mr Geoffrey Pattie (Ministry of Defence) and, surprisingly, Mr Norman Tebbit (Department of Employment).[69] With this backing, Mr Jenkin kept pressure on the Treasury and convinced Mr Howe to place Alvey as a line item on the public expenditure survey that would go to Mrs Thatcher. Mr Howe acquiesced.

Mrs Thatcher received the public expenditure report without commenting on Alvey and Mr Jenkin assumed that her silence meant approval. Soon after, Mr Howe, Mr Nigel Lawson (Department of Energy) and Mr Robin Nicholson (who had replaced Professor Ashworth as the Chief Scientific Advisor) summoned Mr Jenkin to Number 10 to put his case for Alvey before the Prime Minister at a meeting of the Cabinet Committee on Information Technology. Mr Jenkin's officials at the DoI informed him that Mr Howe and Mr Lawson were 'briefed to support Alvey'. Mr Jenkin went into the meeting 'brimming with confidence'. The outcome:

> I was taken apart. Thatcher lost her wool. She was in full flight. It was an hour of vintage Thatcher tirade. She thought I had taken a woman for granted when I actually thought she was sympathetic to Alvey. I had no idea what I was in for. I was deeply shaken and had a bloody nose. My officials had failed to pick up the vibes from the Treasury and from Nicholson.[70]

Where were Mr Howe and Mr Lawson? 'They had their heads under the table. Lawson later said that he had never seen a group of more cowardly Ministers.'[71]

Mr Jenkin wrote a letter to Mrs Thatcher apologizing for his over-confidence and urging her to reconsider Alvey, arguing that it was the 'single most important industrial initiative she could undertake. It was absolutely crucial'. Jenkin realized Mrs Thatcher had lost faith in her Ministers on economic issues, so he called Lord Arnold Weinstock (Chairman of GEC) and asked him to convince her that industry would support Alvey and pay its share. Lord Weinstock confirmed industry's commitment and two weeks later the Prime Minister approved the Alvey Programme.

---

[67] The following account is based on interviews with Lord Patrick Jenkin; and Mr Kenneth Baker.
[68] Interview, Lord Patrick Jenkin.
[69] Oakley and Owen, *op. cit.*, in note 3, p. 62. Interviews, Mr Brian Oakley, 2 June 1992; and Lord Patrick Jenkin.
[70] Interview, Lord Patrick Jenkin.
[71] Interview, Lord Patrick Jenkin.

Mr Jenkin and Mr Baker reported that there was no mention of Esprit in Cabinet discussions of Alvey, despite the fact Esprit's pilot phase was being negotiated (and eventually approved) at that time in the Council of Research Ministers and despite the fact that the Commission was preparing to launch its proposal for the first phase of Esprit. (The Commission was to await the results of an official review of the Esprit pilot phase before designing Esprit I, but it did not. In fact, the pilot phase contracts had just been awarded when, on 25 May 1983, the Commission submitted its formal proposal for the first phase of Esprit to the Council.[72])

The omission was due to the skillful drafting of the Alvey Committee report and to the work of Mr Baker. Mr Baker represented Britain in the Council of Research Ministers where Esprit's pilot phase was being negotiated. Mr Baker admitted that he 'was always extremely suspicious' of Esprit.[73] While leery of Esprit, he was intimately associated with the Alvey Programme. As Mr Oakley suggested, 'Baker's heart was in the UK and all the PR that went with it. He had a personal stake in Alvey, being Minister of Information Technology'.[74] During an interview, Mr Baker claimed that he had seen no significant relationship between the two programmes and he therefore tried to keep them separate in the mind of his Minister. He was successful: Mr Jenkin reported that he had 'absolutely nothing to do with Esprit'.[75]

After nearly eight months of deliberation Mr Jenkin announced approval of the Alvey Programme in the Commons on 28 April 1983: 'This is the first time in our history that we shall be embarking on a collaborative research project on anything like this scale.'[76] The programme announced was significantly different than that proposed by the Alvey Committee, however. Mrs Thatcher's touch was evident.

First, the Alvey Directorate would be much smaller than recommended. Mr Oakley, Secretary of the SERC, would be head of the Alvey Directorate, which would be comprised of five civil servants only. The Directorate would be in the DoI chain of command. Four industrialists would be brought into the Directorate to lead the four technical sub-programmes.

Second, Mrs Thatcher dictated that the Alvey Steering Committee was to be comprised of three or four industrialists from the large IT firms rather than from the DoI's Electronics and Avionics Requirements Board (EARB) as had been suggested by

---

[72] Commission of the European Communities. 'Proposal for a Council Decision Adopting the First European Strategic Programme for Research and Development in Information Technologies (Esprit)'. Com (83) 258 final (Brussels: *Official Journal of the European Communities*, C 321, 26 November 1983).

[73] Interview, Mr Kenneth Baker.

[74] Interview, Brian Oakley, 25 February 1992.

[75] Interview, Lord Patrick Jenkin.

[76] Patrick Jenkin, House of Commons debate, 28 April 1983, *Hansard* (Vol. 41, col. 1007).

the Alvey Committee. Sir Robert Telford, Chairman of the EARB, was to chair the Steering Committee. The Prime Minister was intent on giving the impression that Alvey was an industrial programme rather than a Government one. The repercussions these changes would have on the operation of the Alvey Directorate, its relationship with Whitehall departments and British policy in Esprit are discussed in the next Chapter.

Third, Mrs Thatcher ruled that all projects would receive 50 per cent Government funding. There were to be no projects with 'wide dissemination' warranting 90 per cent Government funding. This ruling was likely to have three effects. It would discourage the participation of small to medium sized enterprises (SMEs) because many SMEs were unable to meet the 50 per cent contribution. Further, the ability of civil servants to control the programme might be reduced. The large firms were not likely to pass decision-making authority to Government when they were footing half of the bill. Finally, the Alvey Directorate was now flush with funds. The Alvey Committee recommended a Government contribution of £250 that would fund some projects at 50 per cent, others at 90 per cent. While Mrs Thatcher's blanket 50 per cent funding rule increased the industrial contribution, she did not decrease the total Government contribution. Thus, the Alvey Directorate had more money than it expected. Remarking on how this came about, Mr Oakley wrote:

> It is inconceivable that the officials in the DTI could not have recognized that an opportunity for reducing the total expenditure was being passed over. Whether Kenneth Baker and the Cabinet recognized it, I cannot say. My guess is that the change came in the middle of a hard-fought Cabinet Committee meeting, when the point would have been overlooked.[77]

Fourth, no new money was allocated to Alvey. The three funding Departments would have to find money for Alvey from their existing budgets.

3.5 Conclusion

The Alvey Programme was approved, but with the grudging acceptance of the Prime Minister. Her hand was forced by economic circumstances, a vocal Minister and a powerful lobby of civil servants.[78] As Mr Reay Atkinson concluded:

---

[77] Oakley and Owen, *op. cit.*, in note 3, p. 61.

[78] Keliher, *op. cit.*, in note 3, argues that Alvey was the product primarily of pressure exerted on the Prime Minister from a tight-knit and well established industrial policy community in information technology.

> Alvey was an accident. I think that the catalytic things were: Mrs Thatcher, until the Falklands helped her out, feeling that she was bashing things, putting nothing constructive in their place, getting Government out of things and not into; Baker coming in, wanting to make his way, enthusiastic, and I think that he exploited an opportunity, a window, at the time; and we [civil servants] put forth powerful arguments. I think the Tory philosophy was totally against the Alvey type approach.[79]

The Alvey Programme was designed by civil servants at a time when Ministerial control was lacking and when political objectives were contested within Cabinet and abrogated in practice. The shape of the Programme reveals their desire to increase (or protect) their budgets and responsibilities.

The Esprit programme was also a bureaucratic initiative designed to serve two purposes. First, it would help reverse the economic decline of the Community. Second, it would provide a channel through which the European Commission could extend its areas of responsibility.

The similarity between the Alvey Programme and Esprit was striking. Many British industrialists who designed Alvey helped create Esprit; both programmes supported pre-competitive research between firms and research institutions in similar technical areas; their implementation structures were alike; and the same British firms and academic institutions were likely to participate in both. Given the overlap in programme content and in potential participants, Esprit was certain to affect Alvey in some manner. The most likely effect was duplication of effort and inefficient allocation of funds. The Committee that designed the Alvey Programme acknowledged a relationship, but failed adjust Alvey's design accordingly. Instead, civil servants erected an artificial divide between Alvey and Esprit. *They had a vested interest in the Alvey Programme because it afforded them large budgets and responsibilities. They would not allow Esprit to threaten those interests. This separation was condoned by Mr Baker and it established future British policy in Esprit.*

[79] Interview, Mr Reay Atkinson.

Implementation of the Alvey Programme
Chapter 4

The Alvey Directorate was a bureaucratic anomaly. It transgressed the traditional demarcation lines according to which IT responsibilities were distributed between the SERC, MoD and DoI. Because industrial secondees directed the technical sub-programmes, the Directorate also broke the traditional divide between Government and the private sector. This chapter explores the structure and decision-making procedures of the Directorate from April 1983 through 1985. The relationship between the Alvey Directorate and civil servants from its three funding Departments is examined. Lastly, the effects of Whitehall control and coordination mechanisms on the Alvey Directorate are explored.

4.1 In the Department of Trade and Industry

Following the June 1983 general election, the Department of Industry and the Department of Trade were merged into a single mammoth department: the Department of Trade and Industry (DTI).[1] The merger forced a marriage of civil servants with different historical traditions and departmental ethos. The Board of Trade was imbued with the liberal, free trade spirit of its founders who despaired of Government intervention in industry. The Department of Industry, in contrast, reflected the interventionist tide of political thinking and had a long history of administering direct Government support to industry. The two traditions were not easily reconciled. Proof of the difficulty is the fact that the department was divided into Trade and Industry branches and had two Permanent Secretaries, one for Trade and one for Industry, until March 1985. As Hennessy quips, 'The DTI is, perhaps, the most schizophrenic of all departments'.[2]

Internecine conflict soon broke out in the DTI. While the Trade division was poised against the Industry division, *civil servants within the Industry branch itself competed for budgets and responsibilities.* Mr David Wiseman, a civil servant in the Research Technology Policy division of the DTI, recalled the atmosphere.

---

[1] For a brief history of the DTI, see Brian W. Hogwood, 'The Rise and Fall and Rise of the Department of Trade and Industry' in Colin Campbell and B. Guy Peters (eds.), *Organizing Governance, Governing Organizations* (Pittsburgh, PN: University of Pittsburgh Press, 1988); and Susan Foreman, *Shoes and Ships and Sealing Wax* (London: HMSO, 1986). Samuel Brittan, *Times*, 16 April 1974, p. 2, criticized the 'reorganization complex' as a preference for making difficult choices in economic policy.

[2] Peter Hennessy, *Whitehall* (London: Fontana Press, 1990), p. 435.

> The DTI was split in the middle between free traders and interventionists. You can understand that someone had carved out an industry as his. He was used to being wined and dined by industry and he knew them all by their Christian names. He was going to make certain that no one trampled on his patch. That was the language of the day.[3]

Competition was exacerbated by the weakness of successive Secretaries of State. Mr Cecil Parkinson was the DTI's first, but short-tenured, Secretary of State. He was followed in October 1983 by Mr Norman Tebbit. Mr Leon Brittan took over in September 1985, but resigned eight months later following the Westland affair. *None of these men was able to establish control over the Department or provide it with consistent objectives.* Hennessy again captures the atmosphere in the Department: 'All this was no way to treat the ministry presiding over the deepest-seated of all the country's problems'.[4]

The absence of Ministerial control at the DTI was made worse by the lack of strong leadership from the centre. The *Financial Times* summarized these years:

> Legislation became bogged down in Parliament, unemployment continued to rise, senior Ministers were sniped at from the cover of anonymous sources in No 10, and even the Tory press said that Mrs Thatcher had run out of puff. Those years of banana skins culminated in the Westland affair, which led to the resignation of two members of the Cabinet while the machinery of Government very nearly fell apart.[5]

The Alvey Directorate was embroiled in and contributed to the competition that enveloped the DTI. Alvey was funded at the expense of other industry programmes, its responsibilities trespassed onto the responsibilities of other civil servants, its Directorate broke down both traditional Departmental barriers and the public/private divide and its Directors unabashedly flaunted Whitehall operating procedures.[6]

---

[3] Interview, Mr David Wiseman.

[4] Hennessy, *op. cit.*, in note 2, p. 434.

[5] *Financial Times*, 9 April 1987, p. 15.

[6] The following account of the operations of the Alvey Directorate is concerned primarily with the relationships between the Alvey Directorate and other Whitehall organizations. For a more factual and detailed account of the Alvey Directorate, see Leo Keliher, *Policy-Making in Information Technology: a Decisional Analysis of the Alvey Programme*, PhD thesis, London School of Economics and Political Science, 1987.

4.2 Organizational Considerations

The Alvey Committee had envisioned a Director from industry and determined that a rank of Deputy Secretary level was necessary to entice an industrialist into Whitehall. (See civil service ranks in Table 4.1.) No industrialist was willing to take the job, but industrialists on the Alvey Committee would not allow an academic to take the position. The only remaining option was for a civil servant to take up the post.

Mr John Major volunteered himself for the job.[7] *(Bureaucratic Politics expects to see civil servants working for promotions.)* He had been very active on the Alvey Committee, but was not awarded the position. It went to another member of the Alvey Committee, Mr Brian Oakley. Mr Oakley was Secretary of the SERC and had worked at both the MoD and DoI during his career. Mr Oakley was promoted from Under Secretary to Deputy Secretary rank and Mr Major remained Under Secretary in charge of the DTI's Electronic Applications Division.

The decision to appoint Mr Oakley as a Deputy Secretary abrogated the existing hierarchical and functional organization of IT in the DTI. The DTI was organized in the following manner. Mr Roy Croft was Deputy Secretary in charge of all IT issues, which were allocated across five divisions: Aircraft, Post and Telecommunications, Nationalized Industries, Electronic Applications and Information Technology. Information Technology division was led by Mr Alastair Macdonald, of Under Secretary rank, and Electronic Applications division was the responsibility of Mr Major, also an Under Secretary. Both men reported to Mr Croft who reported to the Permanent Secretary of the Industry branch of the DTI.

Because the technical content of the Alvey Programme overlapped programmes sponsored by the Information Technology and Electronic Applications divisions, it would have been reasonable to appoint Mr Oakley at Under Secretary rank and have him report to Mr Croft, as Mr Major and Mr Macdonald did, in order to ensure coordination and coherence across IT programmes. Instead, Mr Oakley was given a Deputy Secretary rank and he reported directly to the Permanent Secretary and the Minister for Information Technology, thus bypassing Mr Croft, Mr Macdonald and Mr Major. Within several months of Mr Oakley's appointment, the Treasury department responsible for overseeing senior grades in the civil service objected to his rank. Mr Baker intervened on Mr Oakley's behalf, arguing that it was too late to reverse the decision. Mr Oakley kept the rank of Deputy Secretary.[8]

---

[7] Interview, Mr Brian Oakley, 2 June 1992.

[8] Brian Oakley and Kenneth Owen, *Alvey: Britain's Strategic Computing Initiative* (London: Massachusetts Institute of Technology Press, 1989), p. 66.

Table 4.1: Civil Service Rankings

Rank	Title
G1	Permanent Secretary
G2	Deputy Secretary
G3	Under Secretary
G4	Executive Directing Bands
G5	Assistant Secretary
G6	Senior Principal
G7	Principal

Mr Oakley's appointment raised eyebrows among civil servants in the DTI. Aside from the fact that he was an 'SERC man', he was known to have a rebellious streak and an antipathy toward bureaucratic niceties, rules and regulations. As Sir Robert Telford suggested, 'Brian Oakley was a senior member of the civil servant's club, but he did not act as a civil servant when it came to administrative rules'.[9]

The manner in which Mr Oakley appointed his staff exacerbated the concern and suspicion surrounding his own appointment. The Alvey Directorate was to be staffed with industrial secondees and with civil servants from the three funding Departments. Rather than selecting staff in a transparent manner, perhaps involving an application process, Mr Oakley used 'insider dealing' instead. This is not surprising given the speed with which he was expected to get his Directorate up and running, but his lack of sensitivity to procedure generated resentment among DTI officials. At this point, competition for jobs in the newly amalgamated DTI was at a frenzy. Civil servants from the former DoI were having their budgets cut and their jobs dismantled as the DTI was brought in line with a new trade orientation.

The most sensitive post to fill was Director of Administration, the person responsible for liaison between the Directorate and other Whitehall departments. This person had to be a 'Whitehall warrior', someone who knew 'not just of how to work under Ministers but how to work with the mandarins. It requires an intimate knowledge of where the levers of power actually reside'.[10] The Permanent Secretary of the Industry division, Sir Brian Hayes, recommended Dr Timothy Walker. Dr Walker had been identified as a high flier and was returning to the DTI after a year at the London Business School. Mr Oakley accepted Dr Walker without considering any other candidates.[11]

---

[9] Interview, Sir Robert Telford.
[10] Oakley and Owen, *op. cit.*, in note 8, p. 69.
[11] Interview, Dr Timothy Walker.

Mr Oakley filled the other civil service positions in a similar manner. Given the MoD's involvement in VLSI research, the Director of the VLSI sub-programme had to be from the MoD. Dr William Fawcett, an expert on VLSI at the MoD's Royal Signals Radar Establishment, was recommended. Mr Oakley called Dr Fawcett in for a 'very informal interview' and gave him the job on the spot.[12] Dr Fawcett was the only person interviewed.[13]

The IKBS sub-programme was to be led by a civil servant from the SERC. Mr Oakley filled the post with Dr David Thomas, who he had worked closely with in the SERC. Dr Thomas was a kindred spirit. He was known to have little sympathy for civil service procedure or bureaucratic red-tape. Dr Thomas was appointed despite his lack of experience in IKBS or contacts in industry.[14]

Industrial secondees were to complement the civil service representation. Mr Laurence Clarke, of GEC and Chairman of the SERC's Information Engineering Committee, was appointed Deputy Director and manager of the large scale demonstrators sub-programme. The appointment was astute. As Mr Oakley suggested, 'It was essential for me as a lifelong civil servant to have a deputy from industry and it was highly convenient to have that man from the largest UK firm in the IT industry and, as experience was to show, the largest participant in the programme....'.[15] Mr David Talbot, of ICL, took over the Software Engineering sub-programme. A Plessey man, Mr Chris Barrow, led the MMI sub-programme. Thus, the largest British IT firms were represented by the appointment of these gentlemen. Small firms and universities were not represented. Mr Oakley tried to address the imbalance by appointing Mr Derek Barber, of Logica, director of communications.

Mr Clarke was given the rank of a civil service G3 and the sub-programme directors were given a G5 rank. Mr Robert Morland, Dr Fawcett's replacement, remarked that this policy caused considerable friction. There were civil servants who had spent thirty years in the civil service and had only reached G5 grade.[16] Furthermore, many of the privileges associated with secondment were not enjoyed by civil servants. According to Morland:

> I was in a very privileged position. I had a G5 grade and I reported directly to Brian Oakley, a G2, skipping a whole layer of bureaucracy. Thus, although I was a G5, I had the influence of a G3. I was in a very curious position. I could

---

[12] Interview, Dr William Fawcett.
[13] Interviews, Mr Brian Oakley, 2 June 1992; and Dr William Fawcett.
[14] Interview, Dr David Thomas. Oakley and Owen, *op. cit.*, in note 8, pp. 72-73.
[15] Oakley and Owen, *op. cit.*, in note 8, p. 69.
[16] Interview, Mr Robert Morland.

appear to be from any of the three Departments. I had passes into the DTI, the MoD and the SERC and I could appear to be from industry. [17]

The Directorate's members, the manner in which they were chosen and their rank position in the DTI were contentious matters. The Director was an outsider, appointed at a high level and uniquely positioned in the DTI hierarchy. His Directorate broke down the organizational boundaries that traditionally applied to British policy-making in IT: industrialists were formally integrated into a civil service department; and civil servants from the MoD and SERC were brought into the DTI hierarchy. Mr Oakley had recruited his personnel in a closed, opaque manner at a time when the DTI was reeling under the strain of amalgamation.

Complementing the resentment generated by the Directorate's membership and style of appointment was disquiet caused by the membership of the Alvey Steering Committee. The original plan of the Alvey Committee recommended that the Directorate report to a Steering Committee that was a modified version of the DoI's Electronics and Avionics Requirements Board (EARB). The Steering Committee was to control the Programme. With this in mind, the Chairman of the EARB, Sir Robert Telford, expanded the board before Alvey was approved: 'I was able to bring several very influential and respected people onto the EARB because I told them they would be involved in Alvey. I built up the EARB on the basis that we would run Alvey.'[18]

The Prime Minister had decreed, however, that the Directorate would report to a Steering Committee comprised of a few industrialists from Britain's largest IT firms rather than to members of the EARB. The Prime Minister wished to make the Alvey Programme appear as if it was a programme run by industrialists rather than a support programme run by Government in the fashion of the old Industrial Strategy. The DoI's requirements boards were the embodiment of the ethos of that era -- an ethos loathed by the Prime Minister.[19]

Mr Jenkin and Mr Baker obeyed her dictate, but rather than nominating people for their expertise and because they were representative of the IT industry, they appointed 'their friends'[20] to the Alvey Steering Committee. When Sir Robert Telford was appointed Chairman of the Steering Committee, he found it wholly inadequate. It was far too small (he often had difficulty gathering a quorum) and the members were

---

[17] Interview, Mr Robert Morland.
[18] Interview, Sir Robert Telford.
[19] Interview, Mr Kenneth Baker.
[20] They were: Philip Hughes (Chairman, Logica), Dr Keith Warren (Director of Technology and Strategic Planning, Plessey), Colin Southgate (Chief Executive, Thorn-EMI Information Technology), John Leighfield (Managing Director, BL Systems) and Professor Eric Ash (Head of the Department of Electrical Engineering, University College London).

not representative of the technologies addressed by the Alvey Programme.[21] Sir Robert told the Permanent Secretary of the Industry branch that 'this was a nonsense' and that he wanted to include members of the EARB on the Steering Committee. The Permanent Secretary agreed that the Committee was too small, but Mr Baker would not allow EARB members on the Committee. The Prime Minister had made her position very clear and Mr Baker could not afford to disobey her in such an explicit manner. Mr Baker did, however, acquiesce to Sir Robert's requests for a larger Committee by appointing more of his 'friends' to the Steering Committee.[22]

Sir Robert was still not satisfied. Size and representation remained a problem, but the largest concern was that the Steering Committee had split into factions. Representatives from hardware firms were pitted against representatives from software firms. Constructive debate on the overall strategic trajectory of the Alvey Programme was impossible. Sir Robert again approached the Permanent Secretary, who finally agreed to allow EARB members on the Committee, but only as 'ex-officio' observers. To Sir Robert, the term 'ex-officio' was pedantic and he loaded the Committee with 'ex-officio' observers. In fact, 'ex-officio' members were often the only ones who attended Committee meetings. 'Official' members became incensed and Sir Robert agreed to stop flooding the Committee on the condition that he be allowed to increase the size of his Committee by two. The Permanent Secretary granted the request, but insisted that the two new members were only there 'informally'. Two 'official' members resigned in frustration.[23] As Sir Robert admitted, 'It was really getting to be a bit of a farce'.[24]

Not only did the Prime Minister's formula for the Steering Committee hinder its effectiveness, it also deprived civil servants in the DTI proper of one mechanism through which they could influence the Alvey Directorate. The Alvey Committee recommended that the Alvey Directorate report to the DTI's EARB. Mr Major and civil servants in his LA Division were responsible for all liaison between the EARB and the DTI. When the EARB was removed from the Alvey equation, so were Mr Major and his civil servants.

Deprived of this means of influencing the Alvey Programme, they devised another: they attended, uninvited, the meetings of the Steering Committee. Mr Major was particularly memorable. Sir Robert suggested that, 'John Major was against Alvey because he knew that it would affect his programmes. So he decided to sit on the Committee. This is a civil service thing. They come as advisors and then they become

---

[21] Interview, Sir Robert Telford.
[22] Interview, Sir Robert Telford.
[23] They were Philip Hughes and Colin Southgate.
[24] Interview, Sir Robert Telford.

members and fight for their corner. They are self-selected'.[25] Mr Oscar Roith, DTI Chief Scientist at the time, suggested the same: 'Everyone was making sure their interests were properly protected.'[26] By 1986, there were 17 members of the Steering Committee, seven of whom were civil servants not serving in the Alvey Directorate: four from the DTI, two from the Alvey Directorate and one from the MoD.

DTI officials dominated Steering Committee meetings.[27] Mr Oakley tried to dilute their influence by requesting that a civil servant from the SERC sit on the Committee. (Prior to this, the SERC was represented by Professor Eric Ash from University College London. Professor Ash was chairman of the SERC Engineering Committee, but not a civil servant.) Mr Oakley's request was denied. Rumour had it that John Major was instrumental in having Mr Oakley's request denied, thus keeping the DTI representation disproportionately large.[28]

Mrs Thatcher had envisioned a Steering Committee of three or four industrialists from Britain's largest IT firms. As it turned out, the Committee was four times that size and monopolized by civil servants. Interviewees attest that everyone was at pains to hide the size and composition of the Committee from the Prime Minister and apparently she did not find out.[29]

4.3 Budget Poaching

Alvey was approved on the condition that no new money would be allocated to it. Rather, its funds would come from the existing budgets of the DoI, MoD and SERC. The Department of Industry had no difficulty coming up with its share of the funds. Mr Jenkin had, unknown to the Treasury, amassed a pool of funds large enough to fund the department's share of Alvey without cutting existing programmes.[30] Thus, for the Department of Industry, approval of the Alvey Programme involved a minimum of financial discomfort.

The comfort did not last long. When the Department of Industry merged with the Department of Trade, Mr Jenkin's nest egg was exposed. When Mr Tebbit took over, he returned the excess funds to the Treasury and reallocated much of the remaining funds to programmes falling under the Trade branch's remit. His successor, Mr Brittan followed suit. As the portion of funds allocated to programmes implemented by the Industry branch decreased, existing programmes were sacrificed to

---

[25] Interview, Sir Robert Telford.
[26] Interview, Mr Oscar Roith.
[27] Interview, Sir Robert Telford.
[28] Interview, Sir Robert Telford.
[29] Interviews, Sir Robert Telford; and Mr Brian Oakley, 2 June 1992.
[30] Interviews, Dr John Thynne, 23 January 1992; and Mr Brian Oakley, 2 June 1992.

in order to fund Alvey. From 1984, the budgets for the Information Technology (IT), Electronic Applications (LA) and Telecommunications and Posts divisions decreased as a result of Alvey, but the budget of LA was hardest hit. (See Table 4.2.) Immediately prior to Alvey's approval, the budget for the second phase of MISP, which was implemented by LA division, was to be increased to £50-60 million. When Alvey was approved, part of the DTI's £110 million Alvey contribution was taken from the MISP 2 budget.[31] It was clear to civil servants concerned that Alvey would continue in future to be funded at the expense of other DTI programmes, particularly those of LA division.[32]

Table 4.2: DTI Expenditure on IT Research and Development

	IT Division	LA Division	Telecomms and Posts Division	Alvey Directorate	Total (£millions)
1980/81	7.7	11.6	--	--	19.3
1981/82	8.9	15.9	--	--	24.8
1982/83	21.8	21.6	--	--	43.4
1983/84	26.1	40.2	--	--	66.3
1984/85	31.2	56.3	--	6.3	93.8
1985/86	26.3	51.1	3.6	13.0	94.0
1986/87	18.3	32.5	1.7	30.2	82.7
1987/88	11.8	27.1	1.6	21.2	71.1

Source: House of Commons Select Committee on Trade and Industry, *Information Technology*, First Report, Session 1988-89, Vol. 2 (London: HMSO, 1988), p. 7.

4.4 Territorial Encroachment

During the Alvey Committee deliberations, the MoD, SERC and DoI agreed to pool their finances for IT R&D and allow the Alvey Directorate to allocate the funds without interference. This changed after Alvey was approved and civil servants realized the implications of that commitment.

Shortly after Alvey was approved and Mr Oakley appointed Director, Mr Major (whose application for Director of Alvey had been rejected) threw a spanner in the works by insisting that he oversee all VLSI work under Alvey. His LA division already sponsored VLSI research in silicon and gallium arsenide materials technology. The MoD would not have it. They threatened to pull out of Alvey altogether if LA division was given control over Alvey VLSI work.[33] Mr Oakley and the MoD agreed a

---

[31] Ken Guy, *UK Policies and Programmes in Electronics and Information Technology*, Report to the Alvey Directorate (Brighton: SPRU, December 1986), p. 43.
[32] Interview, Dr Timothy Walker.
[33] Interview, Dr Timothy Walker.

compromise.[34] The MoD would nominally place its microelectronics work under the Alvey VLSI rubric by transferring its budget to the Alvey budget, but it could administer all Alvey contracts for silicon work through its own Central Valve Development Agency (CVD).[35] The CVD was an old bureaucracy within the MoD through which computer research had been funded for decades. As a result, companies receiving funds under Alvey VLSI received them in much the same way as they would have had they been sponsored directly by the MoD.

Dr Fawcett described the situation:

> Previous to Alvey, the MoD and DTI funded programmes which Alvey subsequently covered. When the Alvey Directorate was created, the funding was merged. Then it became a question of who would be responsible for running the show. The view in some areas was that the DTI should have authority to oversee and sign-off spending of money. It was really a case of people protecting their own patches.[36]

Dr Fawcett's successor gave the following insight:

> LA division were extremely miffed about the setting up of the Alvey Directorate. They were even more miffed when they weren't asked to be in charge of VLSI. Bill Fawcett took a strong line about this. He warned that the MoD would pull out of the entire programme if the Alvey Directorate did not have effective control of Alvey VLSI. Brian Oakley and Bill Fawcett insisted that the Alvey Directorate would control VLSI. This was partly because they were not impressed by the way LA ran its own programmes.[37]

Having settled it that the MoD would effectively control Alvey VLSI, Mr Oakley and Dr Fawcett decided that the silicon research and gallium arsenide work sponsored by the LA division should be absorbed into the Alvey Programme. Mr Major fought to protect his responsibilities. He was forced to concede his silicon work, but refused to release his responsibilities for gallium arsenide.[38]

Many interviewees referred to the 'tense' or 'uncomfortable' relations between the Alvey Directorate and LA division.[39] Dr Timothy Walker, Director of Administration in the Alvey Directorate, explained the 'tense' relationship in terms of:

---

[34] Interview, Dr William Fawcett.

[35] Testimony of Mr Brian Oakley, House of Lords Select Committee on the European Communities, *ESPRIT*, 8th Report, Session 1984-85 (London: HMSO, 1985), p. 7; and interview Dr William Fawcett.

[36] Interview, Dr William Fawcett.

[37] Interview, Mr Robert Morland.

[38] Interviews, Dr John Thynne, 15 October 1992; and Mr Brian Oakley, 2 June 1992.

[39] For example, interviews with Dr AJ Wallard, Dr Timothy Walker, Mr Andrew Duguid, Mr Chris Barrow, Dr William Fawcett and Mr Brian Oakley.

> the usual bureaucratic considerations. When a new organization is being created that does things that are already being done in another organization, they will try to protect their areas. Alvey had functions in the semiconductor area that the LA division wanted to protect.[40]

LA division's responsibility for silicon research was not the only responsibility vulnerable to attack from the Alvey Directorate. The Alvey Directorate attempted a similar foray into Man Machine interface (MMI). MMI technology covered four areas: human interface, image processing, speech processing and displays technology. Prior to Alvey, displays technology was funded through the Joint Optoeletronics Research Scheme (JOERS), which was the responsibility of LA division. When Alvey was approved, it was agreed that Alvey would fund the more speculative and innovative displays technology research at a level of £1.3 million and LA division would take the results of Alvey research and fund product development. Thus, responsibility for displays technology research was divided between the Alvey Directorate and LA division.

This formula would work only if LA division and the Alvey Directorate worked closely together. This did not happen. As Mr Chris Barrow, Director of Alvey MMI, confessed, 'We had meetings with our opposites in LA only when we thought it was necessary. That is how we covered ourselves'.[41] Relations soured. Mr Barrow said that the 'mix of personalities' between his division and LA division was 'not right'.

Ironically, the Alvey Directorate ended up putting £6.6 million into displays research, but that money was spent by Mr Major's LA division. The reason: Mr Barrow had lost control of the displays element of the sub-programme. 'There was a lot of hand waving from LA and Brian Oakley and Roy Croft decided to put displays back into LA. I didn't give two hoots. Actually, I did give two hoots, but I learned not to give two hoots.'[42] When Mr Barrow left the Directorate after three years, he was not replaced. The human factors, speech and vision components of the programme were distributed between two other sub-programme Directors. Displays remained in LA division.

Limited consultation and information exchange between the Alvey Directorate and LA was not limited to MMI issues. It was endemic. As Dr Walker suggested,

> There are always arguments about who takes the lead and whether you are consulting each other adequately. For six months, I looked around to find rules. After six months of looking, I realized that everyone made up their own. In any bureaucracy, although there may be procedures, consulting depends on the

[40] Interview, Dr Timothy Walker.
[41] Interview, Mr Chris Barrow.
[42] Interview, Mr Chris Barrow.

> people. They will consult with others because they are afraid of what would happen if they didn't or because they want to because it is in their interest.[43]

It was not in the Alvey Directorate's interest to consult with LA division. When consultation did take place, it was by agreement of the Directorate and the agenda was tightly controlled by the Directorate.

The lack of consultation had long-term ramifications for health of LA division. The Alvey Programme was meant to be one part of an integrated IT strategy. The Alvey Programme was to provide research results, in VLSI and MMI, that LA division's development programmes would bring to market under MISP 2 and JOERS. Because LA division was not briefed on Alvey progress or results, its ability to design MISP projects that would bring Alvey Programme results to market was severely hampered. Shortly after this wrangling began, a moratorium was placed on MISP 2. (MISP was LA division's major source of funds and responsibilities.) As a result of Alvey, LA division lost its responsibility for silicon technology and its major source of funding. As Robert Morland commented, Alvey 'made the dust fly' in LA division.[44]

The Alvey Directorate's relations with Mr Macdonald's IT division were less strained. Mr Macdonald and Mr Oakley were on friendly terms and although the Alvey Programme covered image technology and some areas of software research relevant to IT division the overlap was not as threatening as it was to LA division. IT division was primarily concerned with development whereas Alvey focused on research. Consequently, consultation and coordination with IT division was less necessary than it was with LA division. As Mr Andrew Duguid, a civil servant in IT division, saw it, 'IT division was staffed with regular civil servants who were overworked and didn't have time to walk around and think about things. Close or intimate contact did not happen. After all, busy people don't do things that they don't have to do'.[45] Dr WB Willot, Mr Macdonald's successor summed up the relationship:

> There was far more tension between the Alvey Directorate and EA [LA] than between IT and Alvey. We were far more downstream of what Alvey was trying to do. EA, on the other hand, ran many of the programmes before Alvey came along. EA had a much more passionate interest. Most of the people in EA were technologists who didn't want to let go of what they had been involved with before. We were much less interested in the day to day running of Alvey than we were in the outputs. We weren't really fussed....EA took a different attitude than us. They were much more mixed in with it than we were. They

[43] Interview, Dr Timothy Walker.
[44] Interview, Mr Robert Morland.
[45] Interview, Mr Andrew Duguid.

were tangling with the Alvey Directorate on a day to day basis. They were much closer, but much more fraught.[46]

Relations between the Alvey Directorate and the SERC were strained on occasion as well. Although a 'few eyebrows were raised' in the SERC when Oakley was moved from there to the Alvey Directorate, the SERC felt that 'their man' was in charge and would therefore keep their interests in mind.[47] Like the MoD, the SERC wished to maintain some authority in the Programme it was helping to fund. As David Worsnip suggested, 'The SERC was concerned that the Alvey Directorate would not be funding the best academics and the best quality projects, but might instead fund people who just happened to be at the right place at the right time'.[48] The SERC agreed to allow the Directorate ultimate authority in approving project funding, but with several conditions: grants to academics would be administered through the SERC offices in Swindon; the SERC had to approve all sub-programme strategies before they were implemented; and the SERC would independently monitor and evaluate all projects funded by Alvey. In this way, the SERC maintained a semblance of control, but lost policy-making authority.

The authority the SERC insisted on keeping proved particularly difficult for Mr Barrow's Alvey MMI sub-programme. His MMI strategy had to be approved by the SERC before he could spend any money. Mr Barrow was late getting his strategy completed and by the time it was ready, the SERC had already approved strategies for the VLSI and software engineering sub-programmes. The SERC had become resentful of the Alvey Directorate's authority and took revenge, so to speak, on Mr Barrow.[49] When Mr Barrow submitted his MMI strategy, the SERC delayed approval for three months. While Mr Barrow regretted the 'resentment on the part of the SERC', he understood because they were 'losing their autonomy'.[50]

4.5 Lack of Control

The Alvey Committee was aware that the hybrid and anomalous Directorate they envisioned would be ineffective if placed within a normal bureaucratic hierarchy and subjected to Whitehall control mechanisms. Consequently, the Alvey Directorate was given tools with which it could act autonomously, free from outside interference. At the same time, however, it was essential that the Alvey Directorate coordinate its

---

[46] Interview, Dr WB Willott.
[47] Interview, Dr David Worsnip.
[48] Interview, Dr David Worsnip.
[49] Oakley and Owen, *op. cit.*, in note 8, p. 163.
[50] Interview, Mr Chris Barrow.

activities with IT and LA divisions because Alvey was to be part of a larger, integrated IT programme. Pre-competitive research would be funded by the Alvey Programme and the results brought to market through programmes implemented by LA and IT divisions. The Alvey Committee envisioned that coordination between the organizations would be enforced by the EARB members on the Alvey Steering Committee. The need for other coordination mechanisms was not deemed necessary. However, when the Prime Minister forbid EARB members from sitting on the Alvey Steering Committee, the coordination mechanism was demolished. No other control mechanism was put in its place.

As a result, the Alvey Directorate had an astonishing degree of autonomy. As previously mentioned, the Directorate was not incorporated into the DTI's coordination and control mechanisms for IT issues. Unlike the Information Technology and Electronic Applications divisions, which operated in a briefing channel flowing through a Deputy Secretary to the Permanent Secretary and Minister of Information Technology, the Alvey Directorate had a direct line to the Permanent Secretary and Minister of Information Technology.

Further, the Alvey Directorate was not incorporated into the DTI mechanism through which all departmental research programmes were supervised. The Research Technology Policy Division (RTP) was responsible for ensuring coherence and coordination across the entire gamut of the department's research programmes, but Alvey was not briefed into RTP.[51]

Operating alongside RTP was a smaller group called the Science and Technology Assessment Management Group (STAMG). STAMG was chaired by the DTI Chief Engineer and Scientist, Mr Oscar Roith, who was also head of RTP division. All the main spending units of the DTI were represented in the Group.[52] STAMG reported ultimately to the Resource Management Group, which was chaired by the Permanent Secretary, who then reported Ministers. STAMG was advised by 16 specialist advisory committees, which were staffed by industrialists, called the Technology Requirements Boards.

Officials from STAMG met annually with Treasury officials to decide the DTI's annual budget.[53] The Group then met twice a month and decided how that budget was to be allocated across the department. Despite the appearance of budgetary oversight instilled by STAMG, Alvey was excluded from their deliberations. According to a

---

[51] Interview, Dr AJ Wallard.

[52] Memorandum submitted by the Department of Trade and Industry, House of Lords Select Committee on Science and Technology, *Civil Research and Development*, First Report, Session 1986-87, HL20-II, p. 58; and testimony of Mr Oscar Roith (Chief Engineer and Scientist, DTI), *ibid.*, pp. 64-76.

[53] Testimony of Mr Oscar Roith, House of Lords, *ibid.*, p. 70.

member of STAMG, 'this body influenced Alvey very little because Alvey had its own budget and remit'.[54] Alvey was treated as a 'black box' in terms of departmental control mechanisms.[55] LA and IT divisions, on the other hand, were briefed into STAMG through their Deputy Secretary.

The Alvey Directorate's finances were not scrutinized by the DTI finance division, which oversaw the spending of all other DTI divisions. Consequently, the Directorate was allowed to spend its money in rather heretical ways. For example, funds were surreptitiously transferred between the MoD, the SERC and the DTI and the Alvey Directorate paid the salaries of two industrial secondees although it had been agreed that companies would pay the salaries of their secondees.

Mr Oakley boasted of this autonomy. 'There was some regulation which they [Finance division] were propagating which was nonsense really and I just ignored it. If they had operated, it would have become almost impossible to get contracts placed and so on. There used to be standard memos which went around to all the research spending people saying follow this procedure....[this] was nonsense really and I just ignored it. I never passed these [memos] down to the troops.'[56]

Dr Fawcett's testimony was similar.

> ... we set the rules from the beginning and we bent the rules. Individual directors had responsibility for signing off very large expenditures and no one else had any oversight. We cut through all the bureaucracy in order to get things going. We could make decisions and if other people did not like it, hard lines. We got on with it. We were not hidebound by previous rules and regulations.[57]

This rather relaxed approach did not always sit well with other civil servants in the DTI. As one interviewee put it, 'more bureaucratic part of the department was very unhappy with the funding aspects of Alvey'.[58]

The Alvey Directorate was independent of central Whitehall control and coordination mechanisms also. DTI research programmes were briefed into the Cabinet Office through RTP and STAMG, but because Alvey was not briefed into RTP, it was not formally briefed into the Cabinet Office. Thus, Alvey was not evaluated or controlled in the manner of other Government research programmes. Even if the Alvey Programme had been linked directly into the Cabinet Office, it is debatable whether the Cabinet Office was capable, at that time, of coordinating or controlling policy. The

---

[54] Interview, Dr Alastair Keddie.
[55] Interview, AJ Wallard.
[56] Interview, Mr Brian Oakley, 2 June 1992.
[57] Interview, Dr William Fawcett.
[58] Interview, Dr AJ Wallard.

inefficiency of the Cabinet Office structure for science and technology issues, and IT in particular, prior to the 1983 General Election was discussed in Chapter 2. From 1983 to 1986, the situation improved very little. Its weaknesses during that period are discussed in detail in Chapter 6.

The autonomy the Directorate achieved by being outside DTI and Whitehall control mechanisms was augmented by the Directorate's physical separation from its DTI parent. The Directorate was not housed in the cramped and dismal corridors of Ashdown House. Instead, it was given spacious offices in Millbank Tower overlooking the Thames. As one former civil servant from the IT division put it:

> ...they were in two different buildings. They were only a mile apart, but that was significant. It was not a mile you would walk with any appetite. Because we were in different buildings, it meant that we did not stumble into each other going to the loo or to the canteen.[59]

4.6 Operations

The Directorate relished and cultivated its autonomy. Members viewed themselves as pioneers. They designed their own logo, which they wore on custom-made neck ties. Their letterhead and business cards displayed the Alvey logo, but made no reference to the DTI. Most important, the Directorate eschewed standard operating procedures and decision-making by consensus. They opted instead for flexibility, freedom of maneuver and individual discretion. The motto Oakley enforced among his directors was: 'Make decisions today; deal with the consequences tomorrow.'[60]

The Directorate took full advantage of the autonomy afforded to it, even to the extent of by-passing the various structures designed to assist it. Numerous advisory committees operated to advise the Directorate on strategy and on the implications of funding decisions. With the exception of the committees established for MMI, committee members behaved more like lobbyists than advisors. Their membership most often included people who had the most to gain from a sub-programme and they often gave advice that favoured their own projects. For example, the Alvey VLSI advisory committee was dominated by GEC and Plessey, the two firms who received the most Alvey VLSI funds.

Consequently, the Alvey Directorate chose to ignore the committees. As Mr Morland suggested, 'We had real power. We created policy. On the larger projects, we

[59] Interview, Mr Andrew Duguid.
[60] Interview, Dr AJ Wallard.

decided who would get funding even though we had to discuss the decisions with committees'.[61] Mr Oakley said the following about the Advisory Committees:

> It is the old game of how you run advisory committees. The competent civil servants can always get the decisions they want out of the committees. If the decisions are not important, then you don't consult or perhaps you throw the bones to the committee. If the decision is important, you take jolly good care that the advisory committee comes up with the decision you want.[62]

The Directorate also by-passed the Steering Committee. Mr Oakley was, by nature, skeptical of decision-making by committee. He chose a chairman for the Steering Committee with a similar inclination. Sir Robert Telford saw his Committee's role in the following terms: 'I saw our role as to support and guide the Directorate -- to help the Director get on with it and to achieve the purpose. I never intended it to have executive authority....If the Alvey Steering Committee had the authority to make executive decisions, we never would have kept Brian Oakley.'[63]

Many members of the Steering Committee did not interpret their role in such a manner. In fact, most of them thought it their right to exert firm control over the Directorate. Nevertheless, division within the Steering Committee harmed its credibility and, while maintaining the appearance of deference, Mr Oakley and his Directorate made decisions with little reference to the Steering Committee's recommendations.[64] As Mr Oakley admitted in a House of Lords hearing on Esprit, 'We have a steering committee which has representatives from the industry and the three departments on it and I suppose they are the ultimate authority, but in all the working matters it is myself and my Board [Directorate] who set the policy and reach the decisions'.[65]

Within the Directorate, the sub-programme directors had wide-ranging authority. Rather than designing a detailed strategy to which directors would strictly adhere, the Directorate chose instead to operate within the framework of a very vague strategy: to 'mobilize UK technical strengths in IT'. Interpretation was left up the directors who created and modified their own sub-programme strategies. Flexibility and independence were prized over planning.

The Alvey project selection process was not transparent or structured: it was closed and *ad hoc*. There was a very vague general strategy but few detailed strategies for the individual sub-programmes. Further, although the Alvey Committee proposal

---

[61] Interview, Mr Robert Morland.
[62] Interview, Mr Brian Oakley, 2 June 1992.
[63] Interview, Sir Robert Telford.
[64] Interviews, Sir Robert Telford; Mr Brian Oakley, 2 June 1992; and Mr Derek Roberts.
[65] Testimony of Mr Brian Oakley, House of Lords, *op. cit.*, in note 35, p. 8.

recommended one possible division of funds across sub-programmes, the Directorate had authority to spend as it saw fit. The Alvey Directorate publicly published calls for proposals after the *Alvey Newsletter* was created, but set no deadlines for submission. Project proposals were evaluated by members of the Directorate rather than by teams of impartial experts.

Rather than implementing an impartial, transparent process through which project proposals were designed, submitted and evaluated, the Alvey Directorate assisted a select few companies and academics design projects. These select few were primarily those who had served on the Alvey Committee or were on the Steering Committee or advisory boards. Together, directors and the select participants designed and massaged projects. Directors were also able to act as match-makers -- to suggest the 'appropriate' composition of a consortium. Projects that had been designed with the assistance of a Directorate member were virtually guaranteed of funding.

> As far as possible, the Directorate didn't turn them down because we tried to work in a way where the projects were discussed with the Directorate staff and if necessary with the advisory committee at the draft stage so that a number fell by the wayside then....[This] is the right way I personally feel to run a directed programme which is much more involved with the people who are putting in the project proposal so that unless the director was very badly advised...or they were pig-headed, there would not be major upsets where projects which had been worked up for a year or so would get the total 'no'.[66]

The degree of subjectivity involved in the Alvey process was astonishing. As Mr Madron Seligman, MEP suggested to the House of Lords, 'Alvey has much more freedom to choose on their personal knowledge of the firms who are making projects. Just because they know the firms -- such as GEC or Plessey -- they are not going to be too worried about the details of the proposal'.[67]

While these loose procedures allowed the Alvey Directorate to take the programme in any direction desired, the procedures had several undesirable side-effects. The Directorate had trouble monitoring projects once they got underway. It was not until late 1984 when Oakley hired the Science Policy Research Unit (SPRU) from Sussex University and the Programme of Policy Research in Engineering, Science and Technology (PREST) at Manchester University to evaluate the programme that the Directorate had any means of monitoring the progress of projects.[68] Further,

---

[66] Interview, Mr Brian Oakley, 2 June 1992.
[67] House of Lords, *op. cit.*, in note 35, p. 92.
[68] Interview, Dr Ken Guy.

because proposals could be submitted at any time, Alvey directors could not compare proposals and choose the best ones or fund ones that were complementary.[69]

This relaxed and informal process also made it difficult for the Directorate to control its budget. The Directorate did not work toward a pre-determined allocation of funds across the technical sub-programmes and individual sub-programme directors were given complete authority to allocate funds within their sub-programme. Each director wanted to spend as much as possible and in order to do so each had to beat the others in allocating funds. Mr Oakley put pressure on them in this regard. During the first two years of the Directorate's operations, Mr Oakley pressured his sub-to 'spend, spend, spend'.[70] He was fearful that any uncommitted Alvey funds from the DTI and MoD's contribution would be clawed back by the Treasury. Dr Fawcett, for example, committed approximately 65 per cent of the entire five-year VLSI budget within the first six months of operation.[71]

Sub-programme directors and their deputies did meet every Monday afternoon to report on the state of affairs within their sub-programmes, but because the directors were trying to outspend each other, they were reluctant to be entirely open with their funding decisions. As Mr Oakley admitted, the Monday meetings were more 'consensus-building' than an informed debate on issues or problem solving.[72] Because of these loose procedures and spending pressure, most of Alvey's funds were committed during the first year of operation and the distribution across sub-programmes and participants was very uneven. (The latter is explored further in Chapter 5.)

Although Mr Oakley tried to maintain spending oversight, it was difficult. For the first several years of operation, the Directorate had no effective way of tracking spending. Alvey was funded by three different Departments and the Directorate tried to design a computerized financial information system that would compliment those of the MoD, DTI and SERC. A system that worked was not in place until February 1986.[73] After the first year, the Directorate as a whole did not know how much money it had committed and at the end of five years, the Directorate spent considerably more on academic research than it had planned or calculated.[74]

The lack of standard operating procedures (SOPs) was not surprising given the pressure Oakley was under to get his Directorate operational as quickly as possible.

---

[69] Ken Guy, *et. al.*, *Evaluation of the Alvey Programme for Advanced Information Technology* (London: HMSO, 1991), p. 38.
[70] Interview, Dr David Thomas.
[71] Interview, Dr William Fawcett. *Financial Times*, 10 August 1984, p. 4.
[72] Oakley and Owen, *op. cit.*, in note 8, p. 87.
[73] Oakley and Owen, *op. cit.*, in note 8, p. 200.
[74] Interview, Dr David Worsnip.

This was no easy feat. When Mr Oakley first visited his office at Millbank Tower, there was not a single paper clip or file cabinet in sight nor was there nearly enough support staff. Devising a set of SOPs would have been time consuming and it would have kept the Directorate from its sole task: allocating £250 million in Government funds. Furthermore, the Directorate was a mix of civil servants and secondees who were unfamiliar with, or unsympathetic to, bureaucratic SOPs.

Although conditions biased the Directorate against SOPs, Mr Oakley made a conscious decision to avoid them.

> I wanted to get away from the heavy-handed bureaucracy of Whitehall. I thought, and still think, that the good people who had all sorts of backgrounds and standing in their areas, that it was better that they should run their own patch in the way that suited them...than to have a rigid structure at the top like the civil service.[75]

No other division of the DTI was allowed such free reign. Take LA division and its JOERS programme, for example. According to Dr AJ Wallard,

> Alvey more or less made up its own policy without a great deal of reference to the rest of the department. It was very different from the JOERS programme.... JOERS was very much constrained by the operations of the DTI and it was part of DTI policy. It was much more of a fixed, Whitehall thing. It was handed in the traditional way. Alvey was a new creation. They set their own rules, policy and procedures. They had complete control. JOERS, on the other hand, was constrained by the more traditional bureaucratic way of running a programme.[76]

4.7 Conclusion

The environment at the newly created DTI was tumultuous and uncertain. Civil servants from the former Department of Industry were affected most adversely by the amalgamation. *Their budgets were shrinking, their responsibilities were being discontinued*, their futures were unpredictable. A rapid succession of Secretaries of State unable to impose their control only made the situation worse. *Competition was endemic.* The Alvey Programme, which was funded at the expense of existing programmes, and its implementing Directorate, which encroached upon precious territories, broke traditional IT hierarchy and abrogated bureaucratic procedures, were launched in the midst of this competitive environment. Civil servants in LA division

---

[75] Interview, Mr Brian Oakley, 2 June 1992.
[76] Interview, Dr AJ Wallard.

were most threatened by the Alvey Directorate. They were losing budgets and responsibilities and were very concerned to protect their patch. They tried various means. For example, they refused outright to cede gallium arsenide and they pressured the Permanent Secretary and Mr Baker into having displays technology removed from the Alvey Directorate. *Thus, as Bureaucratic Politics predicts, civil servants in LA division worked to protect their budgets and responsibilities which were threatened by members of the Alvey Directorate, who were working to consolidate and expand theirs.*

This thesis' formulation of Bureaucratic Politics suggests that bureaucrats desire to maximize their budgets, responsibilities and rank. The evidence supports this. It also suggests another desire among some civil servants: a concern to protect tradition, or an accepted ethos. Recall the following quote from Chapter 3:

> *Bureaucrats have a warm way of working with each other.* There was no need at this point to involve Ministers in it. *We went away to get consensus among officials* and then we could present the finalized thing to the Minister. It was necessary to have consensus among the civil servants in order to give advice to the Minister so that he doesn't have to arbitrate between civil servants. IT had to be sold within the DoI.[77]

Civil servants have created a number of traditions, conventions and courtesies according to which their relations with one another are conducted. These involve fairly easily identified and observable standard operating procedures and hierarchies. They also include the more ephemeral concept of 'ethos' or 'philosophy'. Civil servants committed to that ethos and respectful of those courtesies will work to protect them then they are abrogated, by outsiders or by other civil servants.

During the period under review here, civil servants particularly in LA division, but also in RTP division and in the Financial Management division, were suspicious of the Alvey Directorate's place outside the normal departmental hierarchy and of the Directorate's refusal to abide by departmental standard operating procedures. The Directorate had been intentionally granted a significant degree of autonomy, but perhaps no one, including its creators, could foresee the degree of autonomy the Directorate would carve out after becoming operational. *'Alvey free-wheeled. It had self-generated objectives and procedures and no oversight from other parts of the department*[78] *or from other Whitehall organizations such as the Cabinet Office.* More intangibly, civil servants were resentful of the Alvey Directorate's flagrant contempt for the civil service's 'way of doing things'.

---

[77] Interview, Mr Oscar Roith. Emphasis added.
[78] Interview, Dr AJ Wallard.

Thus, competition ensued over budgets and responsibilities and the 'proper way of doing things'. Whether that competition would have an effect on British policy in Esprit is examined in Chapters 6 and 7.

Alvey Programme Funding Patterns
Chapter 5

Chapter 4 explored the operations of the Alvey Directorate, highlighting its loose operating procedures. It was revealed that the composition of the Alvey Directorate was skewed in favour of Britain's largest IT concerns. The result of these two factors was that Alvey funds were highly concentrated in a few technical areas and among a few participants. This chapter explores those funding decisions, both in terms of technical content and participation.

The intention here is not to judge the effectiveness or worth of the Alvey Programme or to suggest ways the Programme could have been improved. Such evaluations and post mortems have already been performed by experts in the IT field. Rather, the purpose is to identify funding and participation patterns that were characteristic of the Programme. Careful attention to both is necessary for a discussion both of the relationship between Alvey and Esprit and of British policy in Esprit.

5.1 Overview

Alvey funded nearly 200 collaborative projects involving 115 firms, numerous universities, several polytechnics and more than 20 research establishments. Although the figures indicate a large participation base, statistical analysis exposes the highly concentrated nature of that participation. Furthermore, although Alvey funds were distributed across five major technical sub-programmes, they were highly concentrated in a single technology area, leaving Alvey's coverage in other technical areas incomplete. (See Table 5.1.) The technical objectives and achievements of the individual sub-programmes are discussed below, followed by an exploration of the characteristics of the Programme's participation.

Table 5.1: Technology Areas in Alvey

Technology Area	Per cent of Funding (%)
Very Large Scale Integration	33
Software Engineering	16
Intelligent Knowledge Based Systems	13
Man-Machine Interface	14
Large Scale Demonstrators	12
Systems Architecture	8
Infrastructure/Communication	4
Total	100

Source: Paul Quintas, Working Paper No. 16, April 1992, p. 12.

5.2 Very Large Scale Integration (VLSI)

The VLSI sub-programme was meant to strengthen Britain's microelectronics capability in two ways: by increasing the speed of fabrication of Application Specific Integrated Circuits (ASICs);[1] and by developing a single technology base that could be used by all British microchip manufacturers. Rationalization of the British semiconductor industry was expected to result from the shared technology base.

Although the VLSI technology area received the most funding, a common technology base for the fabrication of chips was not achieved nor was the rationalization of the industry accomplished as a result of the Alvey Programme. Rationalization and a shared technology base resulted instead from corporate mergers that were not associated with the Alvey Programme. Plessey purchased Ferranti Semiconductors; GEC and Siemens then purchased Plessey and created GEC-Plessey Semiconductors. As a result of the corporate mergers, GEC became the beneficiary of all the VLSI work performed under the Alvey umbrella.[2] Small to medium sized enterprises (SMEs) and universities received very little VLSI funding.[3]

The VLSI programme had three concentrations: VLSI technology, Computer Aided Design (CAD) for VLSI and VLSI architectures. The goal of CAD for VLSI was to create a single CAD resource that would be shared by all IT companies. The programme was plagued with difficulties from the start and Alvey's evaluators suggest that while individual achievements were 'laudable', CAD for VLSI failed to achieve its objective of a shared CAD resource. The objectives were over-ambitious given that: UK chip makers were weak in the CAD area; they were not interested in developing a new CAD base; there was not a strong CAD equipment sector that could afford the necessary investment; and the funds allocated to it were inadequate.[4] VLSI architectures focused on circuit architectures that were necessary to support parallel processing. This area was expected to attract academic participation, but industrial work absorbed most of the budget.

---

[1] ASICs are silicon chips that are modified according to the specific application demands of users.

[2] For a more detailed discussion, see Paul Hare, *et. al.*, *An Assessment of Esprit in the UK* (London: HMSO, 1989), p. 59.

[3] SME and university participation in VLSI was expected to be low. Only the large firms with fabrication capability (British Telecom, Plessey, GEC, Ferranti and Inmos) were expected to receive funding.

[4] Hare, *et. al.*, *op. cit.*, in note 2, pp. 71-72.

5.3 Software Engineering

The Software Engineering sub-programme sought to alter the software design process by creating a disciplined methodology.[5] This ambitious new methodology, called the Information Systems Factory, would result from research in four areas: Integrated Project Support Environment (IPSE) and Tools; Formal Methods; Reliability and Metrics; and IKBS for Software Engineering. Research on databases, operating systems and applications software was not undertaken. The goal of creating an Information Systems Factory was not met, but there were several successes in the IPSE and Formal Methods areas that kept Britain on the leading edge of the technology.[6] Nevertheless, SPRU suggested that the 'acute shortage' of skills in industry prohibited industrial exploitation of the research that came out of the sub-programme.[7]

Much of Alvey's software engineering work was an extension of work that had previously been funded through the SERC in its 1981 Software Technology Initiative and its 1977 Distributed Computing Systems programme. The Alvey Directorate quickly adopted the SERC's well-formulated strategy and many of the academics previously working under the SERC banner switched to the Alvey Programme.

A primary weakness of the sub-programme was the limited participation of small software houses. Their limited participation was caused by several factors: they could not afford to pay 50 per cent of the costs of research;[8] they had little tradition of in-house research, much less collaborative research;[9] and the exclusion of applications software from the Alvey Programme left out numerous small software houses that wrote customized software.[10]

As a result of the limited industrial participation and the SERC's prior involvement, Alvey's software engineering sub-programme had an 'academic flavour' overall.[11] (See Table 5.2.) A majority of the projects were 'Uncle' projects[12] and therefore did not establish the industrial/academic links expected of Alvey projects.

---

[5] For a discussion, see Paul Quintas, 'Engineering Solutions to Software Problems: Some Institutional and Social Factors Shaping Change', *Technology Analysis & Strategic Management* (Vol. 3, No. 4, 1991), p. 362.

[6] See Paul Quintas, Working Paper No. 16, April 1992, p. 17.

[7] Hare, *et. al., op. cit.*, in note 2, p. 79 and p. 84.

[8] Brian Oakley and Kenneth Owen, *Alvey: Britain's Strategic Computing Initiative* (London: Massachusetts Institute of Technology Press, 1989), p. 136.

[9] *Ibid.*, p. 99.

[10] *Ibid.*, p. 81.

[11] Hare, *et. al., op. cit.*, in note 2, p. 78.

[12] Uncle projects had only academic partners, but were supervised by a firm, called an 'Uncle', that had no financial stake in the project. The industrial oversight was believed to guarantee market-relevance.

Table 5.2: Participation in Alvey Software Engineering Sub-programme

Organization Type	Number of Organizations	Number of Participants
Hardware Firms[1]	10	38
Software Firms	21	47
User Organizations	4	4
Universities/Polytechnics	41	109[2]
Government Laboratories	4	6
TOTAL	80	204

[1]GEC, Ferranti, ICL and STC are counted as separate firms. British Telecom is included in this category.
[2]Only 45 of these were projects involving industrial participants.
Source: Alvey Directorate, *Alvey Programme Annual Report* (London: Department of Trade and Industry, 1987).

5.4 Intelligent Knowledge Based Systems (IKBS)

While the software engineering sub-programme sought to change the production methods of an existing community of experts, the IKBS sub-programme sought to create a new industrial community, build on an existing academic one and bring the two together. The IKBS sub-programme was intended to be a ten year programme and was designed according to this long-term perspective.

Like the software engineering sub-programme, IKBS benefited from designs the SERC had drawn up in 1981 for a 'specially promoted programme' in artificial intelligence. If the Alvey Programme had not been approved, the SERC might have gone ahead with their programme, but when the Alvey Programme was approved, the SERC placed it under the Alvey umbrella.[13]

The Alvey Committee had recommended a relatively small budget for IKBS, but when all of Alvey's funds had been spent, IKBS received far more than originally allocated. Two factors account for the overspend. First, in 1986 a Systems Architecture programme was added to the Alvey Programme. Systems Architecture functioned independently, with its own coordinators, but it fell under IKBS in accounting terms. Second, when the demand for IKBS funds outstripped the available supply, funds from the VLSI budget were transferred to IKBS.

This reallocation of funds involved an interesting case of bureaucratic competition within the Alvey Directorate itself. Dr David Thomas, IKBS director, felt that far too much money had been allocated to VLSI. After several years, other directors started to feel the same, fearing that GEC and Plessey were taking advantage of the Alvey Directorate and abusing the funds made available to them.[14] Even the

[13] Owen and Oakley, *op. cit.*, in note 8, p. 130.
[14] Interview, Dr David Thomas.

Director of VLSI, Mr Morland, felt that GEC was involved in Alvey only for the money and had little intention of reaping the benefits of collaborative research. 'Hirst [one of GEC's research centres] would design research projects so that deliverables would never be achieved. That way, GEC used Alvey money to support their private venture work....Some of the money that went to GEC might as well have been poured down a hole.'[15] The large hardware firms had pulled out of several large, strategic projects, leaving other consortium members stranded. Moreover, the large firms were slow and sloppy with their project proposals, assuming that they were certain to be awarded funds by virtue of their size and presumed importance. IKBS researchers provided a contrast to this behaviour. They were quick to table high quality proposals, they met their deadlines and IKBS was a small expenditure item in the Alvey budget. Dr Thomas suggested that, 'The Alvey Directorate had money to spend and if you didn't spend it, you lost it. When GEC would say that they were interested and would be ready in a year, it was much easier to give the money to the proposals which were on the table'.[16]

The results of the IKBS sub-programme were mixed.[17] It strengthened centres of research in artificial intelligence and it increased the number of academics working in the field. Nevertheless, it failed to move academic research toward the applied end of the research spectrum.[18] Although it increased awareness of IKBS in industry, there was very little work undertaken in industry. IKBS was dominated by academics working in Uncle projects.

5.5 Systems Architecture

This sub-programme was added in 1986. It was dominated by industrial participants and STC/ICL lead the pack with its Flagship project, into which numerous smaller projects fed.

5.6 Man Machine Interface (MMI)

MMI research explored the meeting between man and machine. It applied insights from several disciplines (organizational psychology, occupational therapy, ergonomics) to improve the ability of man and machine to communicate. MMI was a 'rag-bag'

---

[15] Interview, Mr Robert Morland.
[16] Interview, Dr David Thomas.
[17] For a comprehensive review of Alvey's IKBS sub-programme, see Erik Arnold, *A Review of the Alvey Intelligent Knowledge-Based Systems (IKBS) Programme* (Brighton: SPRU, July 1988).
[18] *Ibid.*

collection of projects that never came together in a coherent whole.[19] The sub-programme director, Mr Chris Barrow, admitted that MMI was 'always a bit of a Cinderella'[20] and even Mr Oakley described it as 'formless, without clear and obtainable objectives'.[21] Two other factors exacerbated the problem. First, the sub-programme got off to a slow start, and never recovered, when Mr Barrow fell ill shortly after taking up the post. Second, the sub-programme was eyed with suspicion within the Alvey Directorate. MMI lacked a community of experts and it lacked the patronage that VLSI had in the MoD and IKBS and Software Engineering had in the SERC. Mr Barrow commented:

> ...the community was split, and there was very little belief in it, even within the Directorate. Some of them [directors] were kind, but most were skeptical. Maybe that didn't do us any harm, because maybe we had to work even harder and think more deeply. But there were occasions when I felt we could have had more support.[22]

In terms of results, MMI was a mixed bag. Three human interface centres were created in Scotland, Loughborough and London. Very little money went into image and speech processing. The little money there was went to primarily to defence establishments, Edinburgh, Cambridge, University College London, GEC and Logica.

5.7 Large Scale Demonstrators

This sub-programme was not included in the Alvey Committee's original proposal, but was added on the suggestion of ICL. The sub-programme's goal was to take research from Alvey projects and demonstrate them in 'real-life' applications. Five demonstrators were created, the most successful being the Advanced Workstation and Systems Architecture Project, which was subsequently modified and called the Advanced Network Systems Architectures (ANSA). This project developed and demonstrated a single architecture for networked systems.

5.8 Infrastructure and Communications (I&C)

The I&C sub-programme was designed by the Alvey Directorate and originally conceived as a communications support network linking researchers in different

---

[19] Oakley and Owen, *op. cit.*, in note 8, p. 82.
[20] Oakley and Owen, *op. cit.*, in note 8, p. 141.
[21] Oakley and Owen, *op. cit.*, in note 8, p. 85.
[22] Oakley and Owen, *op. cit.*, in note 8, p. 141.

locations (through electronic mail, for example). Sadly, the electronic mail system was a failure; very few researchers used it. The *Alvey News*, a newsletter appearing twice a month with information on conferences and Alvey clubs was more of a success. I&C was also to oversee a high-speed network (provided by BT) for the research teams in project Universe. In the end, I&C included two research projects of its own: Unison and Admiral, two derivations of the Universe project.[23]

5.9 Explaining Funding Allocations and Recipients

Chapter 4 revealed that Alvey Programme directors, most of whom were from Britain's largest IT concerns, were closely involved in the design of many projects and consortia that received Alvey Programme funds. This involvement was, however, limited to a small, select group of participants most of whom were directly involved in the Alvey decision-making process, either through the Alvey Committee or through Alvey's numerous advisory committees or Steering Committee. The select group of participants was not formally organized or structured. It was an exclusive, informal network. The interactions between Alvey Programme directors and the select few participants did not proceed according to well-defined and transparent rules or procedures. Rather, the interactions and relations were informal, *ad hoc* and secretive. *The membership of this small group of participants, their relationships with members of the Alvey Directorate and the effect of these two on policy outcome can be examined in terms of action channels.*

Chapter 1 argued that organizations have rules, which may be formal or informal, that establish who is involved in decision-making and on what issues. Those normally involved in decision-making develop relations and contacts with one another. The rules also determine who collects, analyzes and disseminates information. Individuals who have access to valuable information and are included in decision-making can define the issue at hand, set the agenda and identify and advance particular options. Those options usually benefit themselves or those with whom they have developed a relationship. Action is then taken in pursuit of these particular options. Other possible issues, agendas and options are dismissed along with any action necessary for their fulfilment. *Action is channelled in the direction determined by those involved in decision-making and inside the information loop.* Hence, the term 'action channels'. *This thesis suggests that bureaucrats, in pursuit of their own objectives, chose action from the menu of alternatives thrown up by their organization's action channels.*

---

[23] For a discussion of Admiral and Unison, see Hare, *et. al.*, *op. cit.*, in note 2, p. 137.

What were Alvey's action channels? Information was controlled by the Alvey Directorate and its members were given ultimate decision-making authority as regards project approval and funding allocations. Although the Alvey Committee had stipulated that the Steering Committee and advisory committees would exercise some control over the Directorate's decision-making, the Directorate had effectively by-passed them. Thus, as a part of a formal, regulated decision-making process, those bodies were powerless. As individuals representative of Britain's strongest (or largest) companies, universities and research establishments, they were influential, however. The reason: as individuals, they were incorporated into the Alvey Directorate's informal, unstructured decision-making process. Alvey Directors tended to consult with members of the Alvey Steering Committee and advisory boards on an individual basis when designing projects. This was not because they were members of those bodies, but because they were representatives of the British companies, universities and research establishments for whom and by whom Alvey had been designed. Thus, a small, rather exclusive decision-making club and informal process had developed whereby Alvey Directors and members of the Steering Committee and advisory groups, in an individual capacity, designed Alvey projects. These were the Alvey action channels.

Industrial participants incorporated in Alvey's action channels were surprisingly small in number. BT, ICL, GEC and Plessey representatives had served on the Alvey Committee that designed the Programme. ICL, GEC, Plessey and Logica were represented in the Alvey Directorate through their secondees. Employees of GEC, Plessey, Thorn-EMI and Systems Design Limited (SDL) sat on the Alvey Committee. Representatives of British Aerospace, GEC, Plessey, Racal, Thorn-EMI, Ferranti and STC were involved in the VLSI advisory committees. GEC, Plessey and ICL seconded gentlemen to the Alvey Directorate.

According to Bureaucratic Politics, one would expect to find Alvey funds allocated primarily to those incorporated in Alvey's action channels. Statistics bear this out. As Table 5.3 and 5.4 reveal, Alvey was industrially biased. Tables 5.5, 5.6 and 5.7 reveal that the industrial bias was further skewed toward VLSI and large, defence oriented firms. GEC and Plessey, were primarily engaged in semiconductor manufacture and, with the exception of ICL, Alvey's largest funding recipients were heavily defence oriented. Very few small to medium sized companies or companies engaged in software design, with the exception of ICL and Logica, were represented. Only 50 SMEs participated and the funds they received were minimal. The Alvey Directorate was not particularly concerned to see active participation by small and medium sized companies. Members of the Directorate expected SMEs to bring the results of Alvey research to the market, but not to be involved greatly in the actual

research. Mr Oakley admitted that he 'never shared the unalloyed enthusiasm for small firms as the saviors of the national economy'.[24]

Not surprisingly, SMEs were excluded from Alvey action channels. They did not second representatives to the Alvey Directorate. Relative to the large firms, they were poorly represented on Alvey's Steering Committee and advisory committees. As Mr Din Ghani, of MARI Advanced Technology, a small company that was not included in Alvey action channels, commented:

> The Alvey strategy wasn't clear to outside punters, as it were. What you had to do in Alvey was to find appropriate bid companies to tag along with. That seemed the only way a company like MARI could get funding. They [the big companies] had somebody on the inside who could given them information, could explain the thinking, could tip them off about critical things they could do and what time they should do them. It is a link that was not there for us.[25]

Table 5.3: Alvey Project Participation

Participant Type	Number of Organizations	Number of Participations
Firms	115	421
Universities	56	369
Polytechnics	12	19
Government Research Establishments	24	53
TOTAL	207	862

Source: Paul Quintas, Working Paper No. 16, April 1992, p. 12.

[24] Oakley and Owen, *op. cit.*, in note 8, p.110.
[25] Interview, Mr Din Ghali.

Table 5.4: Funding Types of Participants by Technical Area

Technology	Firms	Academic	Other	Total (£millions)
VLSI	34.3	9.2	3.3	46.8
CAD for VLSI	9.3	2.8	0.7	12.8
VLSI Architecture	2.6	2.7	---	5.3
Software Engineering	15.4	10.1	1.0	26.5
System Architecture	6.1	5.2	0.4	11.7
Man-Machine-Interface	7.4	16.1	2.3	25.8
Intelligent Knowledge Based Systems	11.8	7.8	0.4	20.0
Large Demonstrators	14.1	5.1	1.1	20.3
Infrastructure/ Communication	5.7	1.5	---	7.2
TOTAL	106.7	60.5	9.2	176.4

Note: Figures are for Government funds and represent only 50 per cent funding of industrial work.
Source: Ken Guy, *et. al. Evaluation of the Alvey Programme for Advanced Information Technology* (London: HMSO, 1991), p. 23.

Table 5.5: Alvey Projects by Technical Area

Area	Number of Projects	%
VLSI	61	31
Software Engineering	35	18
IKBS	55	28
MMI	40	20
LD	5	2
I&C	2	1
TOTAL	198	100

Source: Paul Quintas, Working Paper No. 16, April 1992, p. 12.

Table 5.6: Alvey Industrial Participants

Firm	Number of Participations	Funding (£000)
GEC	66	22,945
Plessey	39	10,470
ICL	37	14,720
STC/STL	31	8,815
BT	31	9,030
Ferranti	18	8,645
Logica	16	2,325
Software Sciences/Thorn EMI	11	3,230
SDL	10	1,730
Racal	9	4,435
BAe	7	1,630
Plasma Technology	5[1]	514
Mari Advanced Technology	2[1]	412
CAP	2	1,065
Scicon	2	n.a.

[1]Figures from House of Commons Select Committee on Trade and Industry, *Information Technology*, Vol. II (London: HSMO, 1988), p. 197. *Evaluation of the Alvey Programme* records Plasma Technology with six participations, but gives no funding amounts, and Mari Advanced Technology with three participations, but gives no funding amounts.
Sources: Ken Guy, *et. al. Evaluation of the Alvey Programme for Advanced Information Technology* (London: HMSO, 1991), p. 27.

Table 5.7: Defence Orientation of UK IT Firms (1984 figures)

Company	Total Defence Sales (£ millions)	% Profit from Defence Sales	% Total Sales to MoD
British Aerospace	1786	100	72
GEC	1100	21	60
Plessey	448	31	43
Racal	320	46	30
Thorn-EMI	260	12	60
Ferranti	230	45	61
STC	118	11	89

Source: Ken Guy, *UK Policies and Programmes in Electronics and Information Technology: A Report to the Alvey Directorate* (Brighton: Science Policy Research Unit, University of Sussex, December 1986), Table 5.

Just as Alvey action channels pre-determined that VLSI and the large, defense oriented firms would receive most of Alvey's industrial funds, action channels predicted that academic funds would be similarly concentrated in a small number of select educational establishments. (See Table 5.8.) Although the academic institutions that received the most Alvey funding were, without a doubt, the homes of Britain's most respected researchers and thus could be expected to receive much funding, presence at Alvey's creation and involvement in its informal decision-making club (action channels) certainly helped these establishments receive funding.

Interviewees from the Alvey Directorate attest to targeting these 'first tier' universities for inclusion in Alvey's decision-making. Representatives from these institutions and Alvey Directors together designed projects.[26] The 'second tier' institutions, in contrast, were intentionally excluded from Alvey action channels and were forced, by default, to Esprit. Professor Needham, Director of the Cambridge Computing Centre and member of the Alvey Committee and Alvey Steering Committee, suggested that, 'We never participated in a mainline Esprit project....I think it is fair to say that the second round universities paritcipated in Esprit and the first round were in Alvey. Most first round universities regarded Alvey as preferrable to Esprit'.[27]

Prior to the Alvey Programme in the mid- to late-1970s, Government funded several IT programmes through which close contacts were established between a small group of academics and industrialists. For example, the Science Research Council's Distributed Computing System (DCS) funded academic research at Manchester University and Imperial College. Projects funded under the DCS were continued in the Alvey Programme. In 1981, the Science Research Council funded Project Universe, which linked seven research laboratories: Rutherford Appleton, Cambridge, University College London, Loughborough, GEC's Marconi Research Centre, British Telecom Research Laboratories and Logica. Through these, several universities became members of the British IT fraternity.

Representatives from these universities played a major role in the creation and implementation of Alvey. Take the example of Professor Eric Ash. Professor Ash was head of the Department of Electronic and Electrical Engineering at University College, London and was Chairman of the SERC's Information Engineering Committee. He attended the Westmorland Hotel conference and became a member of the Alvey Steering Committee. Through Professor Ash, University College London had a road into Alvey decision-making.[28]

The University of Cambridge was also well represented in Alvey's creation and implementation. Professor Needham went to Tokyo with the DoI mission. Afterward, he prepared an SERC report on artificial intelligence. The report called for research into artificial intelligence to be included in the Alvey programme. Professor Needham was asked to join the Alvey Committee. His wife, Dr Karen Sparck Jones, also of Cambridge, was a member of the IKBS working group that drew up Alvey's IKBS

---

[26] Interviews, Dr David Thomas; Mr Chris Barrow; Mr Brian Oakley, 2 June 1993; and Mr David Talbot.
[27] Interview Professor Roger Needham.
[28] Interview, Professor Eric Ash.

strategy. The Cambridge link was strengthened when Professor Alec Broers was contracted, in 1985, to assess Alvey's VLSI sub-programme.[29]

Table 5.8: Academic Participation in Alvey Projects

Institution	Number of Participations	Funding (£000's)
London University (London School of Economics, Imperial College, Queen Mary College)	43	5,625
Edinburgh University	36	5,360
Cambridge University	29	3,150
University of Southampton	20	1,975
University of Manchester	18	4,450
Loughborough University	18	4,320
Sussex University	18	1,570
University College London	17	3,530
Oxford University	16	2,220
University of Strathclyde	15	2,570
Warwick	11	1,215
Surrey University	10	1,540
Newcastle University	10	1,460
Reading University	8	1,570
University of Leeds	7	1,430
Lancaster University	7	1,590
UMIST	7	1,250

Source: Ken Guy, *et. al. Evaluation of the Alvey Programme for Advanced Information Technology* (London: HMSO, 1991), p. 28.

5.10 Conclusion

Shortly after the Alvey Programme was operational, it became clear that it was a 'cash cow' for a small number of British companies, primarily ones involved in semiconductor manufacture, and academic establishments, primarily ones involved in IKBS research. Involvement of small to medium sized enterprises was very low. Alvey's participation was biased. According to Mr Atkinson, 'Alvey was hijacked'[30] by the companies and institutions that were incorporated in Alvey's action channels. *As Bureaucratic Politics would predict, action channels afforded them advantages not enjoyed by participants outside the channels.*

Members of the Alvey Directorate and independent evaluators have concluded that while individual Alvey projects were technically sound and respectable, they did not comprise an integrated whole. Funds were too concentrated in VLSI and IKBS, while funding for other technologies was inadequate. From a technical point of view,

[29] Interview, Professor Roger Needham.
[30] Interview, Mr Reay Atkinson.

the Alvey Programme's coverage was incomplete. This weakness can be explained in terms of the operation of action channels.

British Policy in Esprit: April 1983 to Late 1984
Chapter 6

Chapter 4 discussed how the Alvey Directorate contributed to and was affected by the competition prevalent in the DTI following the great 1983 amalgamation. This Chapter explores the central question of this thesis: Did bureaucratic competition affect British policy in Esprit? The time period covered here is from April 1983 to late 1984.

To answer this central question, five hypotheses drawn from the Bureaucratic Politics perspective will be tested.

- Bureaucrats work to maximize their budgets, rank and responsibilities.
- They may compete with one another in doing so.
- The preference-from-position function explains bureaucrats' objectives in Esprit. That is, bureaucrats' objectives in Esprit can be explained by reference to their perceptions of how Esprit would affect their budgets, responsibilities and promotional prospects.
- Action channels provide insight into the means by which bureaucrats pursued their objectives in Esprit.
- Bureaucratic competition can affect British policy in Esprit when Ministerial objectives are not consistent and clearly articulated, when Ministers do not control or supervise the issue and when Whitehall control and coordination mechanisms are ineffective.

6.1 Approval of Esprit

While the Alvey Directorate was frantically trying to organize itself, allocate funds in order to save them from Treasury clawback and expand its area of responsibility, negotiations over the first phase of Esprit were taking place in Brussels. The two year Esprit pilot phase had just commenced, but the Commission went ahead and submitted its formal call to the Council for approval of Esprit I in late May 1983.

The timing of the proposal could have been more astute. The Community was embroiled in hostile and extended negotiations over EC budgetary reform. Mrs Thatcher had 'wrapped herself in the Union flag' and was determined to protect Britain's interests in Europe[1], which mainly involved getting her 'own money back'. At the June 1983 Stuttgart Council, Britain and Germany made their approval of Esprit

[1] Stephen George, *An Awkward Partner: Britain in the European Community* (Oxford: Oxford University Press, 1990), p. 163.

contingent on reform of EC finances.[2] Agreement on those reforms was not reached at the Council meeting and discussion was put off until the Athens summit of December 1983. Esprit remained captive although the Council of Research Ministers had approved Esprit in principle.[3]

The Athens summit did not resolve the budgetary crisis and Esprit remained deadlocked. Finally, the Germans suggested a compromise. They would approve Esprit if no new sources of financing were required but instead money would come from the existing research budget agreed earlier under the Framework Programme.[4] Mr Kenneth Baker, Britain's member of the Council of Research Ministers, was noncommittal. He had been instructed to stall while the Prime Minister fought her larger budgetary battle.[5] Viscount Davignon was incensed and publicly accused the British and Germans of jeopardizing Europe's future.[6] He travelled to London and met with Mrs Thatcher[7] and threatened to go ahead with Esprit without Council approval.[8]

In January 1984, the Commission reached a compromise with the British and Germans. Esprit was to be funded at a level of 750 million ECU (approximately £426 million and the level originally proposed by the Commission) and the Commission agreed to limit its R&D expenditure over the next two years and fund Esprit out of the already agreed appropriations for the Framework Programme.[9] The compromise allowed Britain to save face because it, in theory, forced some discipline on Community spending. Britain was not alone in wishing to bring Community spending under control, but it was Mrs Thatcher's style that led the *Economist* to write, 'the

---

[2] For a discussion of the EC budgetary arrangements, see Ali M. El-Agraa, *The Economics of the European Community*, Fourth Edition (London: Harvester Wheatsheaf, 1994); and Theo Hitiris, *European Community Economics*, Third Edition (London: Harvester Wheatsheaf, 1994).

[3] *Europolitique*, 14 December 1983.

[4] *Agence Europe*, 14 December 1983, p. 10. The Framework Programme is a multi-annual strategy that sets out research priorities and fixes the overall level of Community funding for R&D. Within the Framework Programme are a large number of shared cost research programmes, Esprit being only one of them. Member states approve the budget of the Framework Programme through unanimous voting, but the individual programmes are approved at Council level by qualified majority.

[5] *Financial Times*, 27 February 1984.

[6] *Sunday Times*, 22 January 1984, p. 13.

[7] 'Commission Draws up Work Programme for Esprit', *Financial Times*, 10 February 1984.

[8] *Agence Europe*, 7 November 1983, p. 5.

[9] Approval of Esprit has been variously explained. Margaret Sharp and Claire Shearman, *European Technological Collaboration* (London: Routledge and Kegan Paul, 1987), p. 50, argued that it is the result of a 'newly formed alliance between the Commission and industry, which brought pressure to bear on national governments'. Likewise, Stephen Woolcock, 'Information Technology: the Challenge to Europe', *Journal of Common Market Studies* (Vol. 21, No. 4, June 1984), pp. 515-31, suggested that the most significant factor was the support of industry. Wayne Arthur Sandholtz, *Crisis and Collaboration in European Telematics*, PhD dissertation, University of California at Berkeley, 1989, held that approval of Esprit came as a result of a coalition between industry and the Commission that was able to sell Esprit to national leaders in an 'adaptive mode', or looking for new strategies to help their ailing industries and economies.

British have a respectable case...But so unpopular has Mrs Thatcher become during her budget battle that the British arguments often prove counter-productive'.[10] Mr Baker claims to have 'persuaded' the Prime Minister to accept Esprit as a 'gesture of good will'. 'I agreed to it to show good spirit -- that we were acting constructively. We had a reputation for being awkward.'[11] Esprit was finally approved on 28 February 1984.

The Prime Minister dug her feet in over Esprit's budget and she resisted the increase in the Commission's responsibilities that Esprit required. She did not, however, disapprove of Esprit itself. She had supported Community activity in areas of high technology numerous times. In her report on the 1983 Athens Summit to the House of Commons, she singled Esprit out as an example of constructive Community activity.[12] In the discussion document submitted at the 1984 Fountainbleau Summit, entitled 'Europe -- the Future', she emphasized the growing technological gap between Europe and the US and Japan and recognized that Community action on this front was necessary for realization of the internal market.[13] According to her logic, Community money was better spent on high technology than on subsidies for ailing industries or farmers. Mr Baker echoed her sentiment before the House of Commons: 'The United Kingdom has always attached a high priority to Esprit which we see as just the kind of new policy which the Community needs for its future development'.[14]

6.2 The Fundamentals of Esprit I

Esprit I was the first five year phase of a ten year programme funding collaborative pre-competitive research in IT.[15] Consortia involving at least two companies,

---

[10] *Economist*, 4 August 1984.

[11] Interview, Mr Kenneth Baker.

[12] House of Commons Debate, 7 December 1983, *Hansard* (Vol. 50, col. 330).

[13] 'Europe -- The Future', *Journal of Common Market Studies* (Vol. 23, No. 1, 1984), pp. 74-81. See also Ronald Butt, 'Mrs Thatcher's Modern Europe', *Times*, 5 July 1984; and Margaret Thatcher, *The Downing Street Years* (London: HarperCollins, 1993), p. 336.

[14] House of Commons Debate, 21 March 1984, *Hansard* (Vol. 56, col. 1112).

[15] 'Pre-competitive' was a vogue term tossed about in government circles, but never adequately defined. The Commission's definition of pre-competitive was hazy, leaving the its funding remit quite large.

> In analyzing and selecting concerted and cooperative R&D actions to be undertaken by companies that are competing with each other in the marketplace, care has been taken to ensure that they were sufficiently upstream of the product (i.e. of a pre-competitive nature) whilst not too far away from potential application to lose contact with the projected needs of industry and society (i.e. of an 'enabling' character).

Commission of the European Communities, 'Proposal for a Council Decision Adopting the First European Strategic Programme for Research and Development in Information Technologies (Esprit)', Com (83) 258 final (Brussels: *Official Journal of the European Communities*, C321, 26 November 1983), p. 16.

universities or research institutions established in at least two different member states were eligible for funding. In exceptional cases, participation from non-EC firms was allowed.

Esprit funding was on a shared cost basis to ensure industrial commitment and that market-relevant research was undertaken. Fifty per cent of the cost of each research project was provided by the Commission in the form of a grant and the remainder was contributed by the participants. There were exceptions to the 50 per cent funding rule. Projects were to be divided into two types, A and B, according to their objectives and financial requirements. Although the distinction between the two was not entirely clear, type A projects were large, 'strategic' and industrially relevant while type B projects were small and academically oriented.[16] Type B projects were of a very long-term nature, more likely to involve SMEs and academic or research institutions. Type B projects could be funded at a level greater than 50 per cent when, for example, a request for Esprit funding came from SMEs without adequate financial resources. Type B projects were to receive 25 per cent of the overall Esprit budget.

Esprit funds were allocated among five technical sub-programmes: advanced microelectronics, software technology, advanced information processing, office systems and computer-integrated manufacturing. (Note the similarity to Alvey's technical coverage.)

Esprit research in advanced microelectronics focused on designing, manufacturing and testing very high-speed and very large-scale integrated circuits (VLSI). Unlike the Alvey Programme, Esprit research also focused on new conductive materials, such as gallium arsenide. The microelectronics sub-programme also covered computer-aided design, optical signalling, advanced display technologies and 'intelligent' sensors for automation and image presentation. This sub-programme also covered research on the circuits, switches and fibres necessary for broadband communication (technology able to transmit data, text and images over one line).

The Esprit software technology programme was very much like Alvey's software engineering programme. Both explored theories and methods for developing software. The Esprit advanced information processing programme sought to develop a single system capable of 'intelligent behaviour', but designed for the non-expert user. The Alvey Programme did the same, but under the name IKBS.

Like the Alvey MMI sub-programme, the Esprit office systems sub-programme explored the interface between people and machines. Research concentrated on work stations and information systems that are used by office workers.

---

[16] *Ibid.*, p. 32.

The Esprit computer integrated manufacturing (CIM) programme concerned the introduction of computer aids in all phases of factory operation. The focus was on: computer aided design, computer aided manufacturing, computer aided testing, robots and numerically controlled machine tools. The Alvey Programme funded very little research in CIM.

In addition to these five technical sub-programmes, Esprit created an information exchange system (IES) to facilitate exchange of information. IES provided information to Esprit participants through data-base, computer messaging and conference services.

Both Esprit and the Alvey Programme funded pre-competitive, collaborative research between companies and academics. The technical coverage of the two programmes was very similar and duplication of effort and competition between Alvey and Esprit were likely to occur. France and Germany were funding large IT R&D programmes of their own, so duplication was not limited to British and EC programmes. It is interesting, therefore, that the Commission justified Esprit by arguing that it would reduce the duplication of effort caused by the numerous, national programmes.

Esprit was to:

> enhance their effectiveness and reduce these negative effects [of duplication] through systematic consultation of all parties interested, during the planning and execution of such programmes, aimed at achieving selectivity of attack and improved overall efficiency.[17]

In order to do so, the Commission expected national authorities to consult it when they created new national programmes and during the implementation of existing ones: 'member states and the Community shall exchange all appropriate information to which they have access and which they are free to disclose concerning R&D activities in the domain covered by this Decision, whether or not planned or carried out under their authority.'[18] The Commission envisioned that it would play a coordinating role. Governments would freely give the Commission information concerning their national programmes and let the Commission make amendments to them based on Esprit considerations.[19] Civil servants implementing their own national IT R&D programmes interpreted this as a threat to their budgets, responsibilities and autonomy.[20]

---

[17] *Ibid.*, p. 15.
[18] *Ibid.*, p. 2.
[19] *Ibid.*
[20] Interviews, Mr Brian Oakley, 2 June 1992; and Mr Alastair Macdonald, 21 January 1992.

The technical coverage of Esprit and the Alvey Programme were very similar and the management requirements for Esprit as envisioned by the Information Technology Task Force (ITTF) were strikingly similar to those put forth by the Alvey Committee.

> A programme of the nature of that outlined above will be highly complex to prepare and execute. Programme management will have to be: very flexible to take account of the fact that the IT sector is subject to a rapid rate of change; very efficient to ensure the participation of many small companies active in the field, which must not be discouraged by bureaucratic procedures leading to high overheads.[21]

Not surprisingly, it was the ITTF that met these requirements. It was small and independent of all Directorate Generals, but responsible to the Commission through Viscount Davignon. The majority of its staff were seconded from industry, academia and member states' Governments and on short-term contracts with the Commission.

Assisting the ITTF were three organizations: the Esprit Management Committee, the Esprit Advisory Board and the Esprit Steering Committee. The Esprit Management Committee (EMC) consisted of two representatives from each member state. Representatives were usually Government officials, but they could also be experts from industry or academia. The two British representatives were civil servants from the DTI. The EMC approved the five year workplan and yearly workplans. (The workplans are discussed in detail later in this Chapter.) It also gave blanket approval to the Commission's funding allocations, but it had authority to approve individual projects if they were worth 5 million ECU or more. The EMC approved any departures from Esprit rules, such as funding that exceeded the 50 per cent rule. Voting in the EMC was by qualified majority.

The Esprit Advisory Board (EAB) was a consultative body comprised of sixteen individuals drawn from industry and academia. Approximately half of the EAB members were from the original Roundtable companies and the other half came from SMEs, universities and research establishments. (Eventually EAB membership was broadened to include IT users.) Membership was normally limited to two years. EAB members were to act in a purely personal capacity rather than as representatives of employers. The reality, according to Mr Herman Hauser, Chairman of the EAB, was rather different. 'There is a UK camp and there is a French camp and the UK camp is particularly strong. Of course you are going to side with your country.'[22]

---

[21] Commission of the European Communities, 'On Laying the Foundations for a European Strategic Programme of Research and Development in Information Technology: the Pilot Phase', Com (82) 486 final/2 (Brussels: Commission of the European Communities, 13 August 1982), p. 19.
[22] Interview, Mr Herman Hauser.

The EAB usually met four times per year for one day in Brussels and the majority of its work was associated with the Esprit yearly workplan when it advised on the shape of the plan. Although the EAB was an advisory body, the Commission was legally bound to solicit and consider its advice. For this reason, the EAB received all Commission documentation, including confidential documents that were not given to the EMC and Esprit Steering Committee. The Commission was the secretariat to the EAB. According to Mr Stephen Joseph, a former secretary of the EAB, it played an important agenda-setting role by drawing up reports and recommendations that were used by the Commission as draft documents for future action.[23]

The interests of the largest industrial concerns were represented in the Esprit Steering Committee (ESC). The ESC was originally comprised of officials from the Roundtable 12, but its membership was modified to represent change among Europe's largest IT firms.[24] The organization's name implies an official decision-making role, but 'guidance' and 'legitimization' perhaps best described the ESC. Unlike the EAB and the EMC, the ESC had no legal standing in Esprit. Its members had no rights different from those of other Esprit participants and although it offered advice to the Commission, the Commission was not legally bound to solicit or consider that advice.

Despite its unofficial status, the ESC exerted great influence. Esprit was the product of a dialogue between Europe's largest IT companies and the Commission and the 'viability and success of Esprit is crucially dependent on the big firms'.[25] Although SMEs and universities undoubtedly benefited from Esprit, Esprit was essentially a mechanism through which subsidies were channelled to Europe's largest IT companies, which were represented on the ESC.

The ESC met in Brussels 6-8 times each year where they designed the large, strategic programmes around which other Esprit projects were built. According to Mr Stephen Joseph, former secretary of the ESC, the ESC presented those projects to the Commission, which then instructed experts designing the workplans to 'take them into account'.[26] Invariably, those projects found their way into the workplan. Thus, in the closed forum of the ESC, Esprit's largest projects were designed and because those projects received the majority of Esprit funds, Esprit's budget was effectively dispersed according to 'gentlemen's agreements' in the ESC.[27]

---

[23] Interview, Mr Stephen Joseph, 9 July 1992.

[24] In May 1991, the 17 Steering Committee members represented Thomson, GEC, Plessey, Marconi Underwater Systems, STET, Alcatel, Bull, GEC-Marconi Materials Technology, Philips, SNI, Thomson-CSF, Olivetti and Siemens.

[25] Interview, Mr Derek Flynne, 9 December 1991.

[26] Interview, Mr Stephen Joseph, 9 July 1992.

[27] Interviews, Mr Virgilio Pasquali; and Mr Stephen Joseph, 9 July 1992.

Esprit was built on rather formal and detailed procedures. The general trajectory of Esprit was based on a five year workplan that could be amended each year to account for advances in technology. The five year workplan was approved by the Council of Research Ministers and the EMC, although the Commission could revise it at any time without Council approval. The five year workplan was complemented by yearly workplans. The yearly workplans set out the details of research to be undertaken in a particular year and allocated that year's funding for each of the sub-programmes. The yearly workplan was created by several hundred technical experts chosen by the Commission and brought to Brussels for several weeks. The EAB advised the Commission in the process. The yearly workplan was approved by the EMC but not by the Council.

After the EMC approved the yearly workplan, the Commission published calls for proposals in the *Official Journal.* The timing of calls was known only to the Commission, but it generally occurred twice a year. Each call laid out, in greater detail than the yearly workplan, specific research targets for the call and preferred funding allocations. Following the call, companies and academics created consortia and wrote project proposals that fit the technical specifications of the call. The project proposals were then submitted to the Commission.

To evaluate proposals, a 'mixed bag of naive experts --naive because they never do it again' were brought to Brussels.[28] Experts were chosen by the Commission from industry and academia and on recommendation from member states, but because the IT expert community was small, interviewees suggested that experts were chosen by networking or by 'insider trading'.[29] Mr Din Ghali of MARI Advanced Technology, a company that frequently sent its employees to evaluate Esprit proposals, suggested that the selection process was:

> Very *ad hoc.* A lot of the people are involved in on-going projects. The Commission, having worked with them, know them. That's one set. Then there is another set of people that the member states put forward. In theory, they [the Commission] use people nominated by the member states, but in practice its bound to be the people they know and love.[30]

The project proposal evaluation period lasted two weeks regardless of how many proposals were received. Evaluators were divided into teams of at least three according to technical areas and seated in a high-security area in a Commission

---

[28] Interview, Ms Angela Mison Fulleylove. Ms Fulleylove frequently serves on Esprit evaluation teams.

[29] Interviews, Ms Angela Mison Fulleylove; Mr Virgilio Pasquali; Ms Rosalie Zobel; and Mr Tim Simmons.

[30] Interview, Mr Din Ghali.

building where they were not allowed to speak to each other. Evaluators were given a pack of project proposals (the names of the applicants were not revealed) and the criteria against which they were to evaluate the proposals. Generally speaking, projects were evaluated according to technical soundness, capability of the consortia to deliver the promised results, contribution to Esprit objectives and plans to exploit the results.[31] Each call emphasized some of these over others. Each evaluator read the proposals and completed an evaluation form. After the proposals were evaluated by all members of the group, the Commission official responsible for that particular technical sub-programme gathered the team together and compiled the individual evaluations for each project to form a composite assessment. The team members then voted as a group to reject or recommend each proposal for funding. This vote, along with the reasons why the proposal was accepted or rejected, were recorded on a form called the ER11. The evaluation team then prepared a short list of all the projects it recommended for funding.

A 'foot thick' stack of all ER11s and short lists were then scrutinized by all Esprit sub-programme heads and the Director of Esprit (and the Commissioner in charge of DGXIII after the ITTF was given Directorate General status). Commission officials were not bound to accept the funding recommendations of the experts and Commissioners often reassessed the proposals in light of other, more political, considerations. The other considerations included such things as the overall funding pattern that resulted from the experts' recommendations as it compared to the Commission's desired funding pattern and the balance of funding across member states. If, for example, the CIM sub-programme evaluation team did not approve any proposals for funding and the yearly workplan allocated X ECU for CIM, the Commissioner responsible for CIM had to reassess proposals and approve some for funding. As one interviewee suggested, 'it is not good practice not to spend'.[32] If a Commissioner did not spend the budget allocated in the yearly workplan, that budget was likely to be decreased in the next call.

The most controversial consideration was that of the balance of funding across member states. Member states expected to receive funding equivalent to their contribution, or a *juste retour*.[33] In 1992, for example, the British Government contributed approximately 18 per cent of the total Community budget. Because Esprit funds came from the Community budget, the British contribution to Esprit was calculated to be 18 per cent. In order to receive a *juste retour*, British companies and research establishments needed to receive 18 per cent of the Esprit funds that were

---

[31] Commission of the European Communities, *op. cit.*, in note 15, p. 32.
[32] Interview, Ms Angela Mison Fulleylove.
[33] For a discussion of the importance of *juste retour*, see Sandholtz, *op. cit.*, in note 9.

allocated. The Commission officially denies that *juste retour* was crucial to their funding decisions. They claim that those decisions were based entirely on the project's ability to fulfil objective criteria.[34] In private, however, European Commissioners from DGXIII referred to the 'dreaded J word' under whose guiding hand they operated.[35] Experts who took part in evaluations claimed that Commissioners stressed the importance of *juste retour* as a funding criterion.[36] In testimony before the House of Lords, Mr JM Watson, Technical Director of ICL, suggested that, 'I think this is straightforward political reality; the money has to be seen to be relatively evenly distributed in proportion to the contributions from the member countries'.[37]

With the various political considerations in mind, Commissioners often amended the technical content of a proposal or membership of a consortia. According to interviewees, a lot of 'tooing and frowing' between Commissioners, industrialists and Government officials on the EMC took place at this point.[38] If, for example, a proposal submitted by a company with political influence was rejected by the evaluators, officials from the country might approach a Commissioner directly and suggest that perhaps the wrong evaluation team assessed the proposal. The Commission might then decide to resubmit the proposal to a more 'sympathetic' evaluation team. That influential company might also approach their country's representatives on the EMC, who might then lobby the Commission on behalf of that particular project. The complete package of projects approved by the Commission was put before the EMC. The EMC voted to approve or reject the package as a whole.

The Commission signed a contract with each member of a successful consortium. Each consortium had a leader who acted on behalf of the consortium in all dealings with the Commission. Each project was assigned a project manager who was on temporary contract with the Commission. The project manager visited the research sites and submitted a progress report to the Commission each month. Every six months, the project was scrutinized more carefully and evaluated. Projects normally fell behind schedule, but if the project fell too far behind schedule, the Commission could terminate it.

---

[34] Commission of the European Communities, *op. cit.*, in note 15, p. 32.

[35] Interviews, Mr David Talbot; Mr Steven Roberts; Mr Stephen Joseph, 24 July 1991; Mr Michael Hardy; Ms Rosalie Zobel; Mr Ross Cooper; Mr Barney Trench. The concept was, in fact, institutionalized at the 1984 Fountainebleau Summit where the Council agreed to apply the principle to payments into the budget so that no member would bear a budgetary burden that was excessive to its receipts.

[36] Interviews, Ms Angela Mison Fulleylove; Mr Din Ghali; and Mr Tim Simmons.

[37] House of Lords Select Committee on the European Communities, *Esprit*, 8th Report, Session 1984-85, (London: HMSO, 1985), p. 57.

[38] Interviews, Ms Angela Mison Fulleylove; Mr Din Ghali; Mr Robert Cooper; Mr Derek Flynne, 3 December 1992; and Mr Des Langford.

6.3 Ministers' Policy in Esprit I

Mrs Thatcher established her Government's objectives in Esprit I: limit the size of the Brussels bureaucracy, ensure effective management, get Britain's *juste retour* and minimize the Esprit budget. These were an extension of her objectives regarding most Community issues.[39]

Mr Baker articulated these in the House of Commons. On the issue of bureaucracy, he said:

> At the Research Council member states were also concerned to secure...adequate management arrangements for the programme. Important improvements have been made to the original management proposals which will have the effect of involving member states directly in decisions on major projects and the general direction of the programme. This is a point on which we rightly insisted. We have also pressed for much of the management to be carried out by people on secondment from industry rather than by permanent officials.[40]

> As to the technical work plan, considerable effort has gone into drawing up a technical programme for Esprit. Industry has been closely involved in this process and many British firms have played their part. I regard this involvement of companies as extremely important as a means of ensuring that the programme is not just a bureaucratic exercise but it genuinely affected by the market place.[41]

As far as minimizing the Esprit budget, Mr Baker argued the following:

> The Government have always made clear their support for the principle of Esprit which was rightly described by the Stuttgart summit as an exemplary project. It is indeed the kind of programme the Community should be developing. However, it is a substantial programme with a proposed cost of some £850 million, half of which will be borne by the Community. It would have been wrong to approve a programme of this size unless we were sure that it could be paid for.[42]

Finally, Mr Baker spoke of getting *juste retour* from Esprit.

---

[39] These are by no means the only objectives Mrs Thatcher sought in the European Community. They are ones referred to by Ministers in relation to Esprit. For an insight into Mrs Thatcher's general approach to the Community during this period, see Thatcher, *op. cit.*, in note 13, pp. 536-59.

[40] House of Commons Debate, 21 March 1984, *Hansard* (Vol. 56, col. 1113).

[41] *Ibid.*

[42] House of Commons, Written Answer, 29 February 1984, *Hansard* (Vol. 55, col. 170).

> The United Kingdom was very successful in securing participation in these projects; it is involved in over half of them and in the lead in about one third. So this is a community programme in which there is a very positive net benefit to the United Kingdom and British companies.[43]

From the time Esprit I was approved to late 1984, civil servants did not pursue their Ministers' objectives. They formulated and implemented their own instead. The following discussion employs this thesis' formulation of the Bureaucratic Politics perspective to explore why civil servants failed to implement their Ministers' objectives and what factors caused them to formulate the particular objectives that they did pursue. Five hypotheses will be tested:

- Bureaucrats work to maximize their budgets, rank and responsibilities.
- They may compete with one another in doing so.
- The preference from position function explains bureaucrats' objectives in Esprit. That is, bureaucrats' objectives in Esprit can be explained by reference to their perceptions of how Esprit would affect their budgets, responsibilities and promotional prospects.
- Action channels provide insight into the means by which bureaucrats pursued their objectives in Esprit.
- Bureaucratic competition can affect British policy in Esprit when Ministerial objectives are not consistent and clearly articulated, when Ministers do not control or supervise the issue and when Whitehall control and coordination mechanisms are ineffective.

6.4 *De facto* British Policy in Esprit I

Esprit pilot phase issues had been handled in Alastair Macdonald's IT division, but member states' Governments were minimally involved. (See Chapter 3.) The pilot phase had few implementation requirements. British participation in pilot phase projects was limited primarily to three companies, GEC, Plessey and ICL, and they pursued their interests with little recourse to the DTI.

Esprit I, in contrast, involved member states' Governments, particularly in the EMC. Mr Oakley wanted responsibility for Esprit.[44] Esprit overlapped the Alvey Programme in so many areas that the chance of Esprit poaching Alvey work, thus reducing the responsibilities of the Alvey Directorate, was a very real possibility. Mr Oakley approached Mr Macdonald and the two agreed that responsibility for Esprit

[43] House of Commons Debate, 21 March 1984, *Hansard* (Vol. 56, col. 1112).
[44] Interview, Mr Brian Oakley, 25 February 1992.

should be transferred to Mr Oakley's Alvey Directorate. Mr Macdonald recalled that, 'Brian Oakley was pleased when I agreed that he should handle Esprit. He was relieved that I did not get involved in a turf war. I could have said that I wanted responsibility for Esprit because certain aspects of the work in software, especially office and software technology, was in IT division'.[45]

Bureaucratic Politics predicts that civil servants fight to protect their responsibilities. On the face of it, Mr Macdonald's willingness to pass Esprit to the Alvey Directorate goes against this precept. In truth, Mr Macdonald was pleased to be rid of an administrative burden he predicted would offer little in the way of budgets, responsibilities and promotions. When interviewed, Mr Macdonald said, 'I wouldn't have put any money on Esprit....I thought that they [the Commission] were playing three dimensional chess. Many people thought that the Commission was incapable of implementing such an ambitious programme. I sympathized with that cynicism'.[46]

The decision to transfer responsibility was a quiet and casual one between two civil servants on friendly terms. Their Minister, Mr Baker, was consulted after the decision was made. According to Mr Oakley,

> I think a good civil servant would have said to a Minister after a meeting which was probably not on Esprit, but on Europe or something, 'Oh, by the way, I am proposing to put responsibility for Esprit in the Alvey Directorate' or something like that. The thing would have been half asking Minister's advice, half asking for their authority, but not really expecting them to say no.[47]

Mr Major was not consulted, despite the fact that Esprit covered research in gallium arsenide and MMI, both of which fell under his remit. Mr Major was not satisfied with the new arrangement. He had already had to fend off the Alvey Directorate when it attempted to bring gallium arsenide research into the Alvey Programme. If Mr Oakley and the Alvey Directorate were given responsibility for Esprit, they could gain influence over gallium arsenide research through Esprit. According to Mr Oakley,

> He never really accepted it. Alastair Macdonald very early on, within a few weeks of my coming in, saw the sense of my handling Esprit issues and decreed that. And that was my charter, as it were. If you stand back from it, it was the obvious thing to do. But John Major never liked it....[48]

---

[45] Interview, Mr Alastair Macdonald, 28 October 1992.
[46] Interview, Mr Alastair Macdonald, 28 October 1992.
[47] Interview, Mr Brian Oakley, 2 June 1992.
[48] Interview, Mr Brian Oakley, 2 June 1992.

Mr Macdonald supported Mr Oakley's assessment. Mr Macdonald diplomatically stated that moving Esprit to the Alvey Directorate required 'delicate man management'. 'Man management' meant that Mr Oakley had to concede to Major's demand for a seat on the Esprit Management Committee.

Mr Oakley and Mr Macdonald justified the decision to move Esprit to the Directorate in terms of cost/benefit analysis tinged with a smattering of bureaucratic competition. Mr Oakley suggested that the Alvey Directorate was better placed to administer Esprit because it could take advantage of economies of scale by implementing two similar programmes and because Mr Major had proved himself a less than adequate programme manager. When asked whether anyone considered giving Mr Major responsibility for Esprit, Mr Oakley responded:

> I don't really think so. That point never occurred to me at the time as being logical. Looking at the industrial state now, it doesn't seem possible. But at the time, and there was a history to it, the components industry was seen as a major industry. Of course it was on its way down, but it was a major industry. John ran this division, entirely devoted to that. Within a few years, the thing was crumbling down and then totally crumbled and we were picking up whatever crumbs we could from the Japanese tables. There were major problems and there were endless problems about getting British firms to work together in gallium arsenide and it went on. As far as that was concerned, he [John Major] was clearly in control. But as far as general research on IT was concerned, there was no obvious part that dealt with it by tradition. The highly applied research in the department was handled by the industry divisions, which now seems stupid, and the central research division ran peculiar things where there didn't seem to be an appropriate industry division. You must remember that at one time I ran those divisions myself, before I came out of the DTI. So, when we got a sudden major programme in IT R&D [the Alvey Programme], it was quite logical that Alastair should have seen that Esprit, which was IT R&D should have gone with it.[49]

Neither gentleman paid much heed to the conflict of interest generated by this decision. Administration of Esprit in Britain was now in the hands of an organization that was created expressly to implement the Alvey Programme. Alvey was a national programme which, at root, protected British industry from foreign competition, including competition from European firms that British industry would be collaborating with under Esprit. Esprit undermined the justification for Alvey.

To briefly summarize, Mr Oakley was interested to maximize his budgets and responsibilities. Mr Major was interested to protect his. One gentleman could not

---

[49] Interview, Mr Brian Oakley, 2 June 1992.

pursue his interests without threatening the interests of the other. Consequently, competition ensued. *The first two hypotheses hold true.*

As mentioned earlier, civil servants in the Alvey Directorate did not pursue the objectives set down by their Ministers. Instead, they formulated and pursued their own. The question is whether those objectives can be explained by reference to the Alvey Directorate's perceptions of how Esprit would affect their budgets, responsibilities and promotional prospects. In other words, does the preference-from-position function hold?

Members of the Alvey Directorate did not pursue the Prime Minister and Mr Baker's desire to receive *juste retour* from Esprit. Instead, they maneuvered to keep important British companies and academics working under the Alvey umbrella. In Oakley's words, 'we didn't discourage companies and universities from going to Esprit, but we didn't encourage them either.'[50] As Dr Fawcett attested, 'Esprit was not a significant issue'.[51]

Esprit was a threat to the Alvey Directorate's budget. Recall from Chapter 4 that Mr Oakley was fearful that the Treasury would 'claw back' Alvey funds in its efforts to reduce Government spending. The Chancellor of the Exchequer, Mr Geoffrey Howe (and later Mr Nigel Lawson), was known to be wary of the Programme's finances. The only way the Directorate could ensure that Alvey funds were not clawed back was to spend them as quickly as possible. If British companies were funded by Esprit rather than by Alvey, Alvey would have fewer projects to fund and Alvey money would be vulnerable to the Treasury.

Accordingly Mr Oakley intentionally kept his staff concentrated on Alvey: 'in the early years I tried to keep the involvement of the Alvey Directorate staff in Esprit matters to a minimum, in order to concentrate our limited effort on Alvey matters....'[52] He only allowed three members of the Directorate to work on Esprit. Dr Walker was given primary responsibility and he was assisted by a 'reasonably pedestrian' civil servant, G7, and a secretary.[53]

Members of the Directorate understood that they were to limit participation in Esprit.

> They had a job to do. Their immediate job was to run their programme and they had a budget. If no one was pressing them particularly hard to do it [concern themselves with Esprit], then it tended not to get done. They all went

[50] Interview, Dr David Thomas.
[51] Interview, Dr William Fawcett.
[52] Brian Oakley and Kenneth Owen, *Alvey: Britain's Strategic Computing Initiative* (London: Massachusetts Institute of Technology Press, 1989), p. 112.
[53] Interview, Mr Brian Oakley, 25 February 1992.

> to Brussels, but it was in drips and drabs and I used to feed them the projects that were coming out in the [Esprit] decisions for briefings and so on and some of them took that seriously and some of them didn't. But the fact of the matter is that...it was so much easier for them to get on with the job that they had to do than to worry about Esprit which they didn't have to do.[54]

Mr Din Ghali, of MARI Advanced Technology, recalls the Alvey Directorate's attitude toward his company's interests in Esprit.

> When we were bidding, we had to get the DTI [Alvey Directorate] to back us on those projects. I remember someone saying, 'You are going to get one project. What do you want more than one for? A small company like you, you can't have more than one project.' I said, 'It is important to us. We want three projects and we are going for three.' And then they said, 'You know, you are against GEC in this.' We said we didn't care. 'We are a British consortium and you have to back us.' In the end we won, but it was that sort of battle with the officers in the DTI [Alvey Directorate].[55]

The Alvey Directorate did not always need actively to discourage companies from going to Esprit. Most of Britain's largest and strongest companies and universities were content to work in the Alvey framework when Alvey funds were available. The overheads and difficulties of working with a European consortium and with the Brussels bureaucracy were large relative to working with a British based consortium and the Alvey Directorate. As Dr David Thomas put it, 'Anyone who could get Alvey funding would go for it over Esprit'.[56]

While researchers from strong British firms and universities worked in Alvey, those who could not receive Alvey funding were forced by default to Esprit. According to Mr Oakley, 'Esprit 'didn't seem to be important. It was the second eleven of the British firms in the early years that you could see quite clearly in the analysis that were in Esprit. The best teams were staying with the national funding because they could get the national funding. The second best teams which were not getting the national funding were going that way [to Esprit]'.[57] Expressed in terms of Bureaucratic Politics, *the Alvey Directorate assisted companies incorporated in Alvey's action channels, while those outside the action channels were forced to turn to Esprit.*

MARI Advanced Technology fell outside Alvey's action channels. Accordingly,

---

[54] Interview, Mr Brian Oakley, 2 June 1992.
[55] Interview, Mr Din Ghali.
[56] Interviews, Dr David Thomas; Mr David Dace; Ms Angela Mison Fulleylove; Mr Virgilio Pasquali; and Mr Robert Morland. They all agreed.
[57] Interview, Mr Brian Oakley, 2 June 1992.

> We found that with going to Brussels, we were operating on a level playing field. We didn't have to have the right connections with the 'in' crowd. In Esprit, we could put in a fairly substantial proposal, showing we knew what we were talking about and could bring in appropriate skills from other countries, that was assessed on its own merit. Whereas with Alvey, the whole process wasn't as open. We didn't know how to handle this. With Brussels, we knew exactly where we were. The process was open, you knew what was happening and when. With Alvey, there were no deadlines and it was never clear what was going on.[58]

The same applied for British academics. According to Mr Oakley, British academics working in Esprit were the 'second eleven'. 'Academics who couldn't get Alvey funding went to Esprit. The great universities were looking to Alvey and were getting Alvey funding'.[59] *Academics in Alvey's action channels received the Directorate's attention and Alvey's funds.*

Strong British companies and academics did participate in Esprit at the same time that they worked through Alvey. Those who participated in Esprit were, generally speaking, companies and universities represented on the Esprit Steering Committee or the Esprit Advisory Board and thus had a vested interest in Esprit. The quantity of work they performed in Esprit paled in comparison, however, to their Alvey work. Further, their participation in Esprit was limited to areas not covered in Alvey's remit.[60]

In addition to receiving *juste retour*, Ministers wished to limit the size of the Brussels bureaucracy and ensure effective Esprit management. The structure of the ITTF suited the first objective. The ITTF was small and staffed by a mixture of Commission civil servants and industrial secondees. Thus, nothing was expected of the Alvey Directorate on this score.

As regards the second, ensuring effective management, there was much the Alvey Directorate could have done but did not. During its first couple of years, the ITTF was not the model of bureaucratic efficiency. The ITTF had not, for example, established effective mechanisms to disseminate information. Every month, the ITTF sent crates of computer print-outs to member states' Governments. These supposedly provided member states with all the information they needed about Esprit. In fact, the print-outs were not entirely intelligible and the Alvey Directorate, for one, ignored them.[61] In another example of inefficiency, the ITTF was operating according to a timetable that potential researchers found exasperating and unworkable. The ITTF was late in

---

[58] Interview, Mr Din Ghali.

[59] Interview, Mr Brian Oakley, 25 February 1992.

[60] See, for example, testimony of Logica, House of Lords, *op. cit.*, in note 37, p. 128. For statistics, see Memorandum submitted by the Department of Trade and Industry, *ibid.*, p. 189.

[61] Interviews, Dr Ken Guy; Mr Paul Quintas; and Mr Brian Oakley, 2 June 1992.

preparing yearly workplans, it did not issue calls for proposals according to any predictable schedule, it was slow in evaluating project proposals and the ITTF was unacceptably tardy in paying researchers.[62]

The Alvey Directorate made no effort to improve these inefficiencies. In fact, not once did the Directorate imply that the ITTF's efficiency needed to be improved. To do so would be tantamount to the pot calling the kettle black. Like the Alvey Directorate, the ITTF was a bureaucratic anomaly. It was not an official Commission organization, it was not accountable according to the normal Brussels hierarchy and its operating procedures were very loosely followed. Mr David Talbot, Director of Esprit Software, suggested that the ITTF and the Alvey Directorate were both 'mavericks' and that 'There was a fellow feeling and sympathetic synergy'.[63] *It was not in the interests of the Alvey Directors to change the structure of an organization that mirrored their own or to criticize procedures that were equally as loose as theirs.*[64]

Further, many members of the Alvey Directorate were on good terms with members of the ITTF. Mr Oakley and Dr Walker quickly developed a close working relationship with the Esprit director, Mr Jean Marie Cadiou, and several of his deputies.[65] Mr Oakley suggested that at first the 'Esprit guys were extremely nervous. They thought there would be rivalry between the two programmes. But they quickly saw that there was an organized centre in the UK which knew how to run a programme like Esprit. They knew that they could get an organized input. There was an office with a label "Esprit" on it. From the Esprit point of view, this was very good'.[66] Mr Cadiou and his ITTF were content to work with and support the Alvey Directorate. In their testimony to the Lords, Mr Cadiou and Dr Hunke, Director of Esprit operations, referred to Mr Oakley as the 'prime' representative of the United Kingdom -- this despite the fact that Mr Major was also a UK representative on the EMC.[67] Viscount Davignon described the relationship between the ITTF and the Alvey Directorate in the following manner: 'My feeling is that it is off to a good start. We all know that coordination efforts are not easy, but it is about the most, I would say, sympathetic in terms of relations in between individuals that I have seen for a long

---

[62] For a summary of the failings of the ITTF, see Commission of the European Communities, 'Esprit: The First Phase Progress and Results', Com (86) 687 final (Brussels: Commission of the European Communities, 8 December 1986); and Commission of the European Communities, 'Concerning a Review to Assess the Initial Results of the Programme Esprit', Com (85) 616 final (Brussels: Commission of the European Communities, 19 November 1985).

[63] Interview, Mr David Talbot.

[64] Interviews, Dr Ken Guy; and Mr Paul Quintas.

[65] Interviews, Dr Timothy Walker; Mr Robert Morland; Dr Ken Guy; and Mr Paul Quintas.

[66] Interview, Mr Brian Oakley, 25 February 1992.

[67] Testimony of Mr Jean Marie Cadiou (Director, Esprit, DGXIII), House of Lords, *op. cit.*, in note 37, pp. 143-44.

time, so I would be quite content.'[68] It was certainly not in the interests of the Alvey Directorate to change a good thing. In testimony before the House of Lords, Mr Oakley made clear *his* (not his Ministers') approach to the ITTF.

> In policy terms we welcome the way industry has been deeply involved in drawing up the strategy and priorities for the programme. In administrative terms we welcome the Task Force, that is the IT Task Force of the European Community, who seem to be handling the rather difficult programme very efficiently.[69]

The final objective of Mrs Thatcher, as articulated by Mr Baker, was to limit Esprit's budget. In this regard, the Alvey Directorate had little role to play. Esprit funding had become a Ministerial prerogative, not one for civil servants. Britain was represented at negotiations by Mrs Thatcher or by Mr Baker. Once Esprit I was approved, funding levels were set for five years. Esprit II was not to be considered for several years.

The only task regarding finances that involved members of the Alvey Directorate was in the EMC negotiations over how Esprit money would be allocated across the technical sub-programmes. During this period, Mr Brian Oakley, was not particularly concerned about where Esprit money went as long as Alvey Programme money was being spent.[70]

The lack of concern for Esprit spending decisions during this period is important given the fact that the two programmes were likely to spend money on similar projects and on similar participants. Duplication was likely, if not inevitable. But as Dr Fawcett, Director of Alvey's largest sub-programme (VLSI), revealed, 'There was no coordination or strategy between Alvey and Esprit or agreement over what Alvey should focus on and what Esprit should focus on. We decided to take a running start and deal with the other issues later'.[71] Dr Walker confirmed this: 'I found it very hard to get people to focus on what the balance between Alvey and Esprit should be. When Esprit and Alvey started, no one had done any thinking on what the balance should be. No one had any clear idea about what activities should be done in Esprit and what in Alvey.'[72] The Directorate was concerned only to spend Alvey money and to prevent British companies and academics from receiving money simultaneously from Alvey and from Esprit for a single research project.

---

[68] Testimony of Viscount Davignon (Former Head of DGXII), House of Lords, *op. cit.*, in note 37, p. 173.
[69] Testimony of Mr Brian Oakley, House of Lords, *op. cit.*, in note 37, p. 1.
[70] Interview, Mr Brian Oakley, 2 June 1992.
[71] Interview, Dr William Fawcett.
[72] Interview, Dr Timothy Walker.

To summarize, Ministers established policy in Esprit: get Britain's *juste retour*, limit the size of the Brussels bureaucracy; ensure effective Esprit management; and minimize the Esprit budget. The second and fourth objectives required no action on the part of the Alvey Directorate, but the Directorate was expected to act on the first and the third. They did not, because getting *juste retour* and securing effective Esprit management worked directly against the occupational interests of members of the Alvey Directorate. Rather than pursue Ministerial objectives, they formulated and pursued ones that were compatible with their occupational interests. First, they intentionally limited British participation in Esprit to ensure the safety of the Alvey Directorate's budget. Their actions in this regard were influenced by Alvey action channels. Second, they 'welcomed' an Esprit management structure that had proven itself to be inefficient. It was not in their occupational interests to criticize the ITTF because in doing so they might inadvertently draw attention to their own managerial weaknesses, many of which were caused by the autonomy they so jealously guarded. *Thus, the third and fourth hypotheses are accepted.*

6.5 Getting Away with It

The Alvey Directorate did not pursue their Ministers' objectives in Esprit. Rather, they pursued their own objectives, which, as Bureaucratic Politics would predict, helped them protect their own budgets and responsibilities. *In so doing, bureaucratic competition affected British policy in Esprit.* The relevant question is: Why was the Directorate able to pursue its own objectives, which were inspired by occupational interests, and ignore Ministerial ones? This thesis hypothesizes that bureaucrats may pursue their own interests, in lieu of Ministerial ones, under the following conditions: when Ministerial objectives are not consistent or clearly articulated; when Ministers do not exercise control or supervision over the issue; and when Whitehall coordination and control mechanisms are not functioning effectively.

6.5a Ministerial Objectives

Mrs Thatcher set down very consistent objectives in Esprit. None of her objectives were contradictory, in the sense that pursuit of one hindered or prohibited pursuit of another. Further, Mr Baker articulated these objectives in a very clear manner. It would thus appear that the first condition did not exist in the DTI. Closer inspection, however, reveals that Mr Baker's approach to Esprit was not nearly as consistent as his Commons speeches would suggest.

Mr Baker's approach to Esprit was rather confused. In public, he spoke positively of Esprit and pledged his Government's wholehearted commitment to it. In an interview, he even claimed credit for convincing the Prime Minister to approve it. In the same interview, however, he confessed to being skeptical of Esprit and to having a fondness for the Alvey Programme instead.[73] The Alvey Programme was his 'baby' and he was not interested to let a European programme threaten the Programme (and its Directorate) he had worked hard to create. According to Dr David Thomas:

> ...there was the feeling in lots of parts of the DTI that we were not welcome....As soon as the DTI could get Alvey back into the DTI, they did. It was always a very uneasy relationship....But we had the support of Ken Baker, Britain's first and last Minister of Information Technology, who was pleased with the Alvey Directorate.[74]

Mr Paddy Ashdown picked up on the inconsistencies in Mr Baker's attitude toward Esprit. During a Commons debate in which Mr Baker praised Esprit, Mr Ashdown suggested that throughout the 'Minister's otherwise extremely valuable and useful speech, there seemed to be far too much self-congratulation, which almost bordered on *complacency*'.[75] The incongruence between Mr Baker's public speeches and private behaviour reduced his policy statements to rhetoric from the point of view of his civil servants. *Thus, the first condition was met.*

6.5b Ministerial Control and Supervision

After giving it her approval, Esprit was of little importance in the Prime Minister's lexicon of troubles. Her attention was focused on domestic affairs. The Conservatives won the June 1983 General Election with a sound Parliamentary majority, but before long, 'She looked like a leader marooned.'[76] The economic recovery was very tenuous; miners went on strike; and a bomb exploded in the Grand Hotel, Brighton at the Conservative Party conference. In the face of pressing domestic issues, Mrs Thatcher left Esprit entirely to the DTI and to Mr Baker and his civil servants in particular. Mr Baker, who chaired the Information Technology Advisory Panel which advised the Prime Minister and who sat on the Cabinet Committee on Information Technology

---

[73] Interview, Mr Kenneth Baker.
[74] Interview, Dr David Thomas.
[75] Mr Paddy Ashdown, House of Commons Debate, 21 March 1984, *Hansard* (Vol. 56, col. 1124). Emphasis added.
[76] Hugo Young, *One of Us* (London: Pan Books, 1990), p. 340.

with the Prime Minister, could not recall the Prime Minister being involved in any Esprit issue after it was approved.[77]

From June 1983, when the Department of Trade and Department of Industry were amalgamated, civil servants in the DTI received little in the way of strong leadership from their Secretary of States. Mr Cecil Parkinson was their first Secretary of State, but his tenure was very brief. He was followed by Mr Norman Tebbit, whose relationship with his civil servants was reported to be less than ideal: 'Administration was not his forte. There were complaints about decisions not being made, and of great testiness with departmental officials....'[78]

As far as Mr Baker goes, he paid Esprit little heed and failed to supervise his civil servants. He was not a 'hands-on' Minister; he was an 'ideas man'. Mr Duguid recalled Baker's managerial style: 'He was at the cutting edge of new things even though he would leave it to others whether it worked out or not'.[79] Mr Duguid remembered Mr Baker asking his civil servants for 'a scheme a month'. 'We would say, "But don't you want to know about the old schemes?" He would say, "Never mind about those, I want a new scheme."[80] Dr AJ Wallard suggested a similar style.

> Baker operated in a way very unlike any other Minister I have seen. He had a very outward way of working. Every Monday we had meetings where we would meet and throw out ideas for what we thought we should be doing. People in IT and electronics caught his imagination. His attitude was 'Right, we will do that now.' There was much less considered attention to the issues. Brian Oakley had a close personal relationship with the Minister and he [Baker] allowed him to drive things on his own.[81]

Civil servants in the Alvey Directorate did not work under the watchful eye of their Ministers. They were allowed a free reign to pursue their own objectives in Esprit. *Thus, the second condition was satisfied.*

6.5c Whitehall Control and Coordination Mechanisms

Writing about British foreign policy-making, William Wallace suggest that, 'more or less formally organized, meeting either regularly or irregularly as circumstances require, a network of interdepartmental committees and consultations on matters of

---

[77] Interview, Mr Kenneth Baker.
[78] Young, *op. cit.*, in note 76, p. 497.
[79] Interview, Mr Andrew Duguid.
[80] Interview, Mr Andrew Duguid.
[81] Interview, Dr AJ Wallard.

external relations extends throughout Whitehall'.[82] This network can have its own momentum and logic. Even in the absence of clearly articulated Ministerial objectives and Ministerial oversight, this committee network, which extends across departments and across Whitehall, can ensure that policy and its implementation are coordinated across departments. During the period under review in this chapter, this network failed from the lowest to the highest levels.

At the lowest level, consultation and coordination between the Alvey Directorate and other DTI divisions affected by Esprit was minimal. Chapter 4 discussed how the Alvey Directorate was able to control when and on what issues consultation with other divisions of the DTI took place. As regards Esprit in particular, the Alvey Directorate established a virtual monopoly on information. The Alvey Directorate was the unit formally responsible for Esprit and all information was controlled by it. As Dr WB Willot, attested, 'Once Esprit got bedded down, the Commission sent out information on a general mailing list. But the more important stuff, like project specifications and funding decisions, were gathered by the Alvey Directorate and distributed as they saw fit'.[83] Thus, when Esprit information was passed to other DTI divisions, it was on the Alvey Directorate's terms.

Despite the fact that Mr Major attended EMC meetings alongside Mr Oakley, consultation between LA division and the Alvey Directorate on Esprit issues was limited. As Mr Oakley attested, 'There were occasional meetings on Esprit matters with John Major and his people. One does not want to make an exaggeration. There were only a certain number. I had a team which was the Esprit team'.[84] Dr Walker, the Alvey administrator with formal responsibility for Esprit, said that there were no standard procedures for briefing other DTI divisions on Esprit. 'It all depends on the people involved. Truthfully, LA would probably claim that we didn't given them total information and we would say that we did.'[85]

Mr Major attended Esprit Management Committee meetings with Oakley, but Mr Oakley and Jean Marie Cadiou had the close working relationship. As Dr Walker explained, 'Often someone from LA came to the Management Committee, but they did not do much. I'm sure they had their contacts in Brussels, but Brian and I knew Cadiou well....'[86] As Mr Oakley confessed, 'The Electronics Applications division disliked the Alvey Directorate running Esprit. They largely tried to ignore my role, but they did not get away with it. John Major didn't have much influence and he was quickly isolated.

---

[82] William Wallace, *The Foreign Policy Process in Britain* (London: Allen and Unwin, 1977), p. 50.
[83] Interview, Dr WB Willott.
[84] Interview, Mr Brian Oakley, 2 June 1992.
[85] Interview, Dr Timothy Walker.
[86] Interview, Dr Timothy Walker.

Rapidly, Brussels turned to me. Thereafter, he was not a very important player'.[87] Mr Major declined an interview, but when asked in a telephone conversation about his role in Esprit, he remarked that 'it was not a pleasurable experience' and that 'unfortunately, I had no influence at all on Esprit'.[88]

At the divisional level, the Alvey Directorate had a great measure of independence as regards Esprit. The same was true at the departmental level. In the DTI, priorities for national and EC research programmes should have been established by the RTP division and STAMG. However, as Chapter 4 revealed, the Alvey Directorate was independent of RTP and STAMG. Consequently, the Alvey Directorate was free of departmental oversight mechanisms and able to pursue its own objectives in Esprit.[89]

The next level, interdepartmental committees that are meant to coordinate and oversee departmental policies, also failed to supervise the Alvey Directorate and hence its actions in Esprit. There were two committees (one of departmental Chief Scientists and Permanent Secretaries that reported to the Secretary of the Cabinet and one of departmental Chief Scientists that reported to the Chief Scientist in the Cabinet Office) that were supposed to coordinate departmental research policies. Because the Alvey Directorate was independent of DTI departmental networks, it was free from the oversight of these committees. Even if the Alvey Directorate had been incorporated into these committees, it is doubtful whether they could have exerted effective control. The committees seldom met and were accused of being ineffective.[90]

The Cabinet Office, the next step above interdepartmental committees, was too weak to exert influence over Esprit. Attempts had been made during Mrs Thatcher's second term to redress the inadequacy of the Governmental machinery for science and technology. In 1983, the Central Policy Review Staff (CPRS) was abolished. The Science Group was split into two groups (the Science and Technology Secretariat and the Economics Secretariat) and both were moved to the Cabinet Office. The Chief Scientist was moved with the Science and Technology Secretariat to the Cabinet Office and the Secretariat's staff was increased. The Science and Technology Secretariat acted as the secretariat for a Cabinet Committee on science and technology that reportedly existed.[91] The committee of departmental Chief Scientists and

---

[87] Interview, Mr Brian Oakley, 25 February 1992.
[88] Telephone conversation with Mr John Major, 9 November 1992.
[89] Interview, Dr AJ Wallard.
[90] House of Lords Select Committee on Science and Technology, *Civil Research and Development*, First Report, Session 1986-87, HL20-I (London: HMSO, 1987), p. 21.
[91] *Ibid.*, p. 21.

Permanent Secretaries reported to the Secretary of the Cabinet and the committee of departmental Chief Scientists reported to the Chief Scientist in the Cabinet Office.[92]

Although authority had been centralized in the Cabinet Office, where the Chief Scientist and the Science and Technology Secretariat were now located, the effectiveness of the Government machine for science and technology improved little, if at all. An article with the headline 'Who is Robin Nicholson' appeared in the *Financial Times*.[93] The anecdotal article suggested that in a Cabinet meeting, someone asked 'Who is Robin Nicholson?'. Not a single Cabinet Minister knew. Robin Nicholson was the Chief Scientific Advisor and had been so since late 1981.

Neither the Chief Scientist nor the Science and Technology Secretariat had any scrutiny over the Alvey Directorate or influence over Esprit.[94] According to Mr Oakley:

> My recollection is that there was a Cabinet Office mechanism about the briefing of our representative in Brussels in general and that a certain number of issues were fed into that Committee. It was never very effective, but it was there. When I say never very effective, it probably just did not really worry about Esprit very much. My recollection is that the Cabinet Office Committee was not terribly interested once the money had been committed.[95]

The House of Lords Select Committee on Science and Technology blamed this state of affairs on a 'vacuum at the centre'. The Prime Minister claimed responsibility for science and technology policy, but did not provide adequate guidance.[96] Regarding information technology in particular, the Information Technology sector working party of the National Economic Development Council argued that the lack of a coherent Government policy had caused a crisis in the IT sector.[97]

The Alvey Directorate was free of Whitehall control and coordination mechanisms. *Thus, the third condition was satisfied.*

6.6 Conclusion

Bureaucratic relationships in the DTI were competitive as some civil servants worked to maximize and protect their budgets and responsibilities. (The evidence did not

---

[92] *Ibid.*

[93] *Financial Times*, 'Who is Robin Nicholson?', 5 March 1983, p. 15.

[94] Interviews, Dr Ken Guy; and Mr Paul Quintas.

[95] Interview, Mr Brian Oakley, 2 June 1992.

[96] House of Lords, *op. cit.*, in note 90, p. 41.

[97] National Economic Development Council, Information Technology Economic Development Committee, *Crisis Facing Information Technologies* (London: National Economic Development Council, June 1984).

indicate that civil servants were concerned with issues of rank and promotion.) As part of the competition, civil servants in the Alvey Directorate formulated objectives in Esprit that furthered their occupational interests. They pursued those objectives rather than ones articulated by their Ministers. Action channels provided useful insight into the means by which their objectives in Esprit were pursued. They were allowed to follow their interests in lieu of Ministerial ones because they were not provided with consistent Ministerial objectives, because they were not subject to Ministerial control or supervision and because Whitehall mechanisms were too weak to exert control over the Directorate. The Directorate was, as one interviewee put it, 'a loose cannon on deck'.[98] Consequently, bureaucratic competition was allowed to have a real effect on British policy in Esprit.

[98] Interview, Dr AJ Wallard.

British Policy in Esprit: Late 1984 Through 1985
Chapter 7

From April 1983 to late 1984, the Alvey Directorate created much consternation primarily among civil servants in LA division. Alvey threatened their budgets and responsibilities. From late 1984 through 1985, Alvey's threat potential was viewed with alarm by a greater number of civil servants and its merits were questioned in Parliament. A constant barrage of attacks reigned down on the Directorate. The Directorate inadvertently gave ammunition to its critics by making its operations and funding decisions public.

This Chapter explores the heightened alarm and ensuing competition following the Directorate's new policy of openness. Once again, question central to this thesis is raised: Did bureaucratic competition affect British policy in Esprit? To answer this, the same five hypotheses advanced in Chapter 6 are tested here.

- Bureaucrats work to maximize their budgets, rank and responsibilities.
- They may compete with one another in doing so.
- The preference from position function explains bureaucrats' objectives in Esprit. That is, bureaucrats' objectives in Esprit can be explained by reference to their perceptions of how Esprit would affect their budgets, responsibilities and promotional prospects.
- Action channels provide insight into the means by which bureaucrats pursued their objectives in Esprit.
- Bureaucratic competition can affect British policy in Esprit when Ministerial objectives are not consistent and clearly articulated, when Ministers do not control or supervise the issue and when Whitehall control and coordination mechanisms are ineffective.

7.1 Competition Intensifies

During the first year and a half of Alvey, competition was rather localized -- it took place primarily between the Alvey Directorate and LA division. The competition proved rather innocuous for the Directorate during this year and a half. It was tucked away in Millbank Tower, outside DTI control channels and supported by the Minister for Information Technology. Although the Alvey Directorate had fared well in the competition, Mr Oakley felt it necessary to placate some of his critics by opening the Directorate's operations and funding decisions to public scrutiny.

Funding decisions and general Alvey gossip were published twice each month in the *Alvey Newsletter*, which went to virtually every institution active in IT. Beginning in 1984, annual reports that disclosed funding allocations were published. Well attended annual conferences were held. Perhaps most important in this disclosure exercise were two teams of academics Mr Oakley employed in early 1985 to evaluate the Alvey Programme. One team was from the Science Policy Research Unit (SPRU) at Sussex University and the other was from the Programme of Policy Research in Engineering, Science and Technology (PREST) at Manchester University.

The teams were asked to assess the technical content and management of the programme. Their assessments were not always complimentary. They criticized the Directorate's relaxed management and they criticized the fact that Alvey funds were highly concentrated among a small number of participants and in the VLSI sub-programme. The evaluators reported their findings to a wide audience through the *Alvey Newsletter*, at annual conferences and in a widely read mid-term review of the Alvey Programme.[1] Mr Morland suggested that the Programme's 'dirty laundry was aired in public': 'Oakley allowed the evaluators free reign and they had no apparent censorship.'[2]

While the Directorate was 'airing its dirty laundry in public', a number of changes were taking place in the DTI. First, the DTI's overall budget was being cut substantially. Second, the Department's funding priorities were being redefined. The new Secretary of State, Mr Norman Tebbit (and Mr Leon Brittan after him), shifted money away from industrial support and toward trade promotion. DTI resources were shifted to 'near market' activities such as product development, technology transfer, marketing research and consultancy services particularly for SMEs.[3] Third, the Financial Management Initiative (FMI) was finally taking effect. The FMI had been resisted by Ministers and civil servants alike, but by late 1984 it had taken root in Whitehall and the DTI: 'permanent secretaries got as close as they ever do to enthusiasm when talking about administrative matters.'[4] Although much of the burden of the FMI fell to Ministers, it did force civil servants to concern themselves with managerial efficiency and 'value for money'. The new ethos Mrs Thatcher was trying to instill in the civil service was finally taking hold.

---

[1] Luke Georghiou, *et. al.*, *Evaluation of the Alvey Programme: Interim Report* (London: HMSO, 1987).
[2] Interview, Mr Robert Morland.
[3] Department of Trade and Industry, *Science and Technology Report 1984-85* (London: Department of Trade and Industry, 1985).
[4] Peter Hennessy, *Whitehall* (London: Fontana Press, 1990), p. 619. For a brief discussion of the FMI, see Chapter 2.

Alvey was made vulnerable by the three changes. First, it was a large programme sapping the now precious resources over which civil servants in the DTI were forced to compete. As Chapter 4 showed, when Alvey was approved, it affected the budgets of IT and LA divisions, but had little effect on the budgets of other DTI divisions. By late 1984, however, cuts in the DTI's overall budget were forcing the entire Department to absorb the costs of Alvey. Second, it was contrary to the Secretary of State's new trade oriented spending regime. Third, it was not managed according to the ideals encapsulated in the FMI.

Competition ensued. DTI civil servants who had not previously been overly concerned with Alvey worked to protect their budgets and responsibilities by criticizing the aberration. There is also evidence that they attacked the Directorate in order to protect a new ethos that was seeping through Whitehall: 'value for money'. *Thus, the first two hypotheses hold true.*

Mr Duguid described the criticisms.

> Alvey seemed to draw a lot of consensus. Scientists supported it. Economists supported it. The administrators supported it. Everyone was in favour of progress for the DTI and everyone was in favour of Alvey. There was a coalition of support. This was a fashion which moved through the DTI and Whitehall. Then there was a backlash, a fashion swing. There was talk of the programme being so well endowed, but no consideration of whether the projects might be wasteful or not. There began to be a question mark over Alvey. There were jealousies from those who were not getting money and there were also questions about where the fruits of Alvey were.[5]

Civil servants from the Financial Resources Management division (FRM), who had responsibility for the Department's finances, began to question whether the Alvey Programme was providing 'value for money'.

> The FRM was pressuring everyone to do correct evaluation of programmes. They were bearing down on everyone and reflected the culture of change toward getting a value for money. John Chapman was the guy. I remember him running around saying that things which did not get good evaluations should not be funded and pointing out that there were many contending users of scarce resources.[6]

Civil servants from the Policy Planning Unit were similarly critical of Alvey. They were concerned that Alvey was absorbing far too much money and spending that money in a way that was contrary to their Minister's policy of support for SMEs.

---

[5] Interview, Mr Andrew Duguid.
[6] Interview, Mr Andrew Duguid.

> There was a growing feeling that IT was not the only enabling technology. There were others and we should be more even-handed about it. Biotechnology and ceramic technology (the idea that you could make a car out of ceramic) were both on the list. There were guys in the PPU [Policy Planning Unit] saying that there are other enabling technologies we should look at. Chris Benjamin was interested in securing large overseas projects such as power stations on the continent. And then there were the programmes and people who were giving marketing support for small firms.[7]

Dr AJ Wallard recalled a phrase coined against Alvey: '"large regular users". There was a feeling that large companies were taking Government to the cleaners.'[8] According to Mr David Wiseman, the consensus across the DTI was that the Alvey Directorate 'paid lip service' to SMEs.[9]

Cloistered away in Millbank Tower, Mr Oakley and his Directorate tried to insulate themselves against the backlash. They made light of the criticism, marking it down to a innocuous case of bureaucratic competition between the Trade division and the Industry division.

> I will be blunt. There was quite a bit of little Englanders in the DTI, particularly in the middle classes, not at the top levels. The quality of DTI staff falls off steeply. Senior officials had qualities which I could never aspire to -- the undersecretaries and permanent secretaries. But then it dropped off precipitously....[T]hey were dominated by the attitude of the old Board of Trade. The feeling for free trade was enormous. They didn't like Industry and they didn't like Alvey.[10]

Mr Oakley underestimated the situation. This was no longer a harmless case of bureaucratic competition that was limited to a few civil servants in the DTI battling for budgets and responsibilities. The Treasury, one of Whitehall's heavyweights, was now involved. The Treasury had been hostile toward the Alvey Programme from the outset, branding it 'another Concorde' -- a project with a high profile but limited commercial return. The Treasury was also concerned that Alvey would not generate research that was 'additional' to the work already being undertaken by industry. Rather, industry would use Alvey Programme funds to finance research they would have funded themselves in the absence of the Programme. Government money would be wasted.

The Alvey Directorate had paid little heed to the Treasury's concerns for 'additionality'. In evaluating project proposals, the Directorate did not consider

---

[7] Interview, Mr Andrew Duguid.
[8] Interview, Dr AJ Wallard.
[9] Interview, Mr David Wiseman.
[10] Interview, Mr Brian Oakley, 2 June 1992.

whether industry would fund that research in the absence of Alvey funding. As Mr John Barber suggested,

> Additionality was rather finessed over. I don't think it was ever treated explicitly. It is a bit lost in the mists of time. Also, Government's pro-active role in setting strategy would mean that additionality would be ensured. But when companies and the Directorate actually got together to design the project, the reiteration in actual projects would lose a bit of the additionality.[11]

When the Directorate published its funding decisions, the Treasury's suspicions were confirmed. Alvey was funding the large, defence oriented semiconductor manufacturers who probably would have undertaken the research in the absence of Alvey (perhaps even under the aegis of the Ministry of Defence).

The Treasury began to attack the Alvey Directorate. As Mr Geoffrey Pattie, who took over as Minister for Information from Mr Baker, recalled,

> Critiques began to fall into the hands of the Treasury who did not think Alvey was worthwhile to begin with. And the Treasury are all too happy to talk to civil servants or industrialists who had not received their fair share of the funds. Then Thatcher catches wind of all this and starts sending out memos and people have to justify their spending.[12]

The National Audit Office and Committee of Public Accounts got wind of the goings on and word went out that they were preparing an investigation of the Alvey Directorate.

Dissatisfaction with the Alvey Programme and its Directorate was no longer limited to Whitehall. It spread to Westminster as well. Members of Parliament expressed similar concerns to those voiced by civil servants in the DTI. Why was Alvey funding Britain's largest semiconductor firms at the expense of SMEs and other technologies? Why was Alvey so poorly managed? Where were the fruits of the Government's spending?

On the issue of SMEs, Mr Paddy Ashdown argued the following:

> I have some reservations about Alvey, particularly since it seems to be directed too much towards the big computer firms and not sufficiently towards the small firms. Yesterday I spoke to Mr Nigel Smith, the chairman of the British micromanufacturers group. He said "It simply has not happened. Alvey will not

[11] Interview, Mr John Barber.
[12] Interview, Mr Geoffrey Pattie, 9 November 1992.

produce anything for the small manufacturer. It is not there to assist us -- it is a carve up for the giants".[13]

Mr Kenneth Warren, chairman of the House Select Committee on Trade and Industry, expressed a similar concern. In a written question, he asked the Minister for Information Technology to 'review the problems presented for the development of information technology by the bias in the Alvey programme against the funding of contracts with small companies'.[14]

The technical coverage of the Programme also came under attack.

I particularly regret the absence of any real mention of data-base management, which is fundamental and in which there is need to stimulate much more effort in this country....I also regret the absence of any emphasis on the use of declarative languages in the programme for software engineering.[15]

Paradoxically, the Government's Alvey programme...is undermining our capacity to develop this vital technology [gallium arsenide] effectively for the future. Why is that? The Alvey programme is dedicated to developing silicon chip-based technology and it is taking up all the available funding with which gallium arsenide could be developed....Many believe, and I am inclined to agree with them, that it might have been more logical for the Government not to have tried to catch up on silicon chip technology through the Alvey programme. Many in the industry believe that attempt, though brave and admirable, may be doomed to failure.[16]

Concern over the management of the programme was expressed.

The British electronics industry has been dominated for years by defence requirements, and this can distort the pattern of research and development. Of course there is a vast technical expertise available from the Ministry of Defence. But the dominance of defence personnel in the administration of the Alvey programme on VLSI suggest that with the best will in the world we may simply misjudge commercial market requirements.[17]

Inevitably, if in industry the companies...are going to contribute 50 per cent of the initial research costs, they will want to see that their own particular interests are represented in the research programme. And this is not going to be what Alvey anticipated. Alvey was talking about something comparable to the

---

[13] Mr Paddy Ashdown, House of Commons Debate, 17 February 1984, *Hansard* (Vol. 54, col. 497).
[14] Mr Kenneth Warren, House of Commons Written Question, 25 March 1985, *Hansard* (Vol. 76, col. 19).
[15] Lord Flowers, House of Lords Debate, 18 January 1984, *Hansard* (Vol. 446, col. 1124).
[16] Mr Paddy Ashdown, House of Commons Debate, 11 March 1985, *Hansard* (Vol. 75, col. 122).
[17] Lord Flowers, House of Lords Debate, 18 January 1984, *Hansard* (Vol. 446, col. 1126).

> Japanese 'Fifth Generation' computer programme, which was a directed programme of research in which the director of the programme went out and said 'These are the things which we believe should be the first priority for research' -- rather than waiting for General Electric Company or Logica or others in industry to come forward with their own propositions and then trying to reconcile them and putting them into some sort of coherent programme.[18]
>
> Questions were raised about the fruits of the Alvey Programme.
>
> It has been suggested to me by a number of people in the industry that we would need to spend about 10 times the sum going to the Alvey programme to convert projects into commercial products that could be sold worldwide. If that is true, is the Minister confident that the estimated £3.5 billion needed to back up the Alvey programme will be forthcoming?[19]

Perhaps the most damaging attack from Westminster came in April 1985 when the House of Lords Select Committee on Overseas Trade determined that Britain's balance of payments deficit in IT would increase from £2.3 billion in 1984 to £4 billion by 1988. The Alvey Programme, whose results were not expected for years, would do nothing to boost the figures.[20]

7.2 The Loss of Kenneth Baker

Criticism against the Alvey Programme and its Directorate was becoming more intense, more injurious and it was coming from many different quarters. In the midst of this, the Alvey Directorate lost one of its most valuable assets: Mr Baker. Chapter 6 showed that Mr Baker's patronage was one important factor contributing to the Directorate's ability to get on with its business of administering Alvey funds with little concern for the world outside Millbank Tower. In September 1984, Mr Baker left the DTI and moved to the Department of Environment as Minister for Local Government. He was replaced by Mr Geoffrey Pattie.

Mr Pattie was very interested in the space industry, which fell under his remit, and was soon accused of neglecting the IT industry.[21] Mr Pattie was defensive against the criticism. During interviews, he made the following comments: 'During my tenancy, it was hard to keep people excited about IT. People are more likely to go along with

---

[18] Lord Mcintosh of Haringey, House of Lords Debate, 18 January 1984, *Hansard* (Vol. 446, col. 1136).
[19] Mr Stuart Randall, House of Commons Debate, 21 December 1984, *Hansard* (Vol. 70, col. 722).
[20] *Financial Times*, 1 May 1985, p. 6.
[21] For a scathing article, see 'Miracle Man', *Electronics Times*, 11 November 1985, p. 22.

things which are new and exciting';[22] 'enthusiasm for IT was on the wane';[23] 'Baker saw an opportunity, put all his energy into it and then left it to explode on other people.'[24]

7.3 The European Onslaught

Criticism against the Alvey Programme and its Directorate was raging. The Directorate's supportive Minister had left. Europe then invaded the IT scene with four initiatives that challenged the merits of national IT programmes.

First, in April 1985, the French Government called for a bold initiative to counter the United States' Strategic Defence Initiative ('Star Wars'). EUREKA (European Research and Coordination Agency), as it was called, would fund research in advanced technology, including information technology.

Second, in late June 1985, the President of the European Commission, Mr Jacques Delors, called for a doubling of the Community's research and development budget. He suggested that over half of the new budget go to IT R&D.

Third, the Single European Act, which was being negotiated, looked set to give the Commission formal competence in areas of high technology and usher in the 'European Technological Community'.[25]

Fourth, in November 1985, the Commission proposed the second phase of Esprit. When Esprit I had been approved in early 1984, the Commission obviously intended to see a second, much larger, phase of Esprit approved in the future. The future came earlier than expected. Less than two years into the five year Esprit I programme, the Commission proposed that the second phase of Esprit be brought forward to 1987, rather than 1989 as had been agreed earlier. Most of the 750 million ECU budget for Esprit I, which was to last from 1984 to 1989, had already been allocated. The Commission wanted Esprit II to begin in 1987 with new funding in the range of ECU 2.2 billion.[26]

The Commission was clearly anxious to increase its budget and responsibilities. The small ITTF was the driving force. From a small, autonomous unit accountable only to the Commissioner for Industry, the ITTF had merged with the Directorate

---

[22] Interview, Mr Geoffrey Pattie, 9 November 1992.
[23] Interview, Mr Geoffrey Pattie, 26 November 1992.
[24] Interview, Mr Geoffrey Pattie, 9 November 1992.
[25] For a discussion of the Single European Act and the Commission's competence in areas of high technology, see Margaret Sharp, 'The Community and New Technologies' in Juliet Lodge (ed.), *The EC and the Challenge of the Future* (London: Pinter, 1993).
[26] *Financial Times*, 18 November 1985, p. 3; and *Europolitique*, 7 December 1985.

General for Information Technology to become the fully fledged DGXIII.[27] All European Community programmes relating to information technology and telecommunications were implemented by DGXIII. Esprit was handled through a division called DGXIIIa, headquartered in Brussels, under the leadership of Mr Jean Marie Cadiou.

In 1985, DGXIIIa had 150 personnel. Fifty of these were C grade secretaries, 17 were B grade clerical assistants and 83 were A grade administrators. Of the 100 A and B grades, 89 were classified by the Commission as 'scientific staff' and the remainder as 'administrative staff'.[28]

The eleven 'administrative staff' were permanent Commission civil servants who had joined the ranks of DGXIIIa through the formal hiring procedures for civil servants, which involves a difficult exam, numerous interviews and a long waiting period. The remaining 89 'scientific staff' were on temporary contract with the Commission for a 3-5 year renewable period. Unlike the 'administrative' staff, they did not join the Esprit bureaucracy through the formal civil service appointment procedures. Rather, they were head-hunted from other posts, both inside the Commission and outside, interviewed and immediately rejected or posted to DGXIIIa.[29]

Although the title 'scientific staff' implies that these individuals had scientific or technological training and industrial or academic backgrounds, most of the 'scientific' staff were recruited from other areas of the Commission bureaucracy where they had worked for the Commission either on a temporary basis or in a consultant capacity.[30] Many of the 'scientific' staff had business or management skills and experience rather than scientific or technical ones. Use of the word 'temporary' to describe this category of employee is also misleading. The Commission limits 'temporary' employment to nine years, but interviewees suggest that people who wish to extend 'temporary' employment beyond nine years simply apply for the status 'agent temporarie indefini' -- temporary agent on indefinite contract. There is no time limit to this type of employment. Most of the Esprit staff have this status.[31]

Interviewees suggest that this method of personnel recruitment and categorization served two purposes. First, it allowed the ITTF to increase its numbers

---

[27] Personal correspondence with Mr Barney Trench, 15 January 1992.
[28] Commission of the European Communities, 'Proposal for a Council Decision Adopting the First European Strategic Programme for Research and Development in Information Technologies (Esprit)', Com (83) 258 final (Brussels: Commission of the European Communities, 25 May 1983), p. 5.
[29] Interviews, Mr Stephen Joseph, 24 July 1991; and Dr Philip Roe, 24 July 1991.
[30] Interviews Mr Stephen Joseph, 24 July 1991; Dr Philip Roe, 24 July 1991; and Mr Ross Cooper.
[31] Interviews, Mr Stephen Joseph, 24 July 1991; Dr Philip Roe, 4 November 1992; and personal correspondence with Mr Berney Trench, 24 July 1991.

very quickly in order to have the resources necessary to implement the first phase of Esprit. Second, by classifying the majority of personnel as 'scientific' staff, and not counting them as permanent civil servants, the Commission allayed the fears of industry and of member states' Governments that the Esprit bureaucracy was just another Brussels bureaucracy intent only on ensuring its own survival and feathering its own nest. As Dr Philip Roe put it:

> The distinction is complete nonsense. The only reason for this is that when MPs ask why British money is going to support so many Commissioners in Brussels with fat salaries, the junior Minister in the Foreign Office can cite a small statistic and jokingly say that it is smaller than the number of staff in the Scottish Office.[32]

With the increase in Community activity on the R&D front and the growth in the Commission bureaucracy, some British civil servants in the Treasury and the DTI saw a need to examine more closely the relationship between British Government funding for R&D on a national level and Britain's contribution to the Community's R&D programmes. Several questions needed to be answered: Who was monitoring British spend in Esprit? Was it necessary to fund both Esprit and Alvey? Were Alvey and Esprit duplicating each other? Was the Alvey Programme preventing British researchers from participating in Esprit?

The Treasury quickly realized that it did not monitor or control the Government's contribution to that increasing Community budget.[33] Ninety-five per cent of the Community's R&D budget was awarded to private organizations. When private British institutions received Community funding, the money was, from the Treasury's point of view, Government money that was simply being recycled. The British Government's contribution to the Community budget was being converted into subsidies to the private sector. This 'hidden subsidy' was not recorded as a Government subsidy in departmental budgets nor was it treated as such in the Public Expenditure Survey. This situation was unsatisfactory.

Although the Treasury was concerned with all Community spending on R&D, Esprit was particularly problematic. It was the largest Community R&D programme and it was being administered in the UK by an organization over which the Treasury had no control. As Dr Keddie put it, Esprit 'frightened the Treasury'.[34]

---

[32] Interview, Dr Philip Roe, 4 November 1992.
[33] The following discussion of the evolution of the Treasury's thinking on this matter is drawn from an interview with Mr Michael Corcoran, a civil servant in the Treasury's European division.
[34] Interview, Dr Alastair Keddie.

Civil servants from the DTI's Research Technology Policy division were similarly concerned about the Alvey Directorate's implementation of Esprit. According to Dr Keddie, RTP division began to realize that, 'Significant programmes were emerging from Brussels. They were programmes which were driven primarily by Brussels civil servants although they did consult some with industry. These programmes essentially landed on people's desks. There was absolutely no coordinated response'.[35] *Civil servants in RTP wanted to establish a foothold in Esprit.*

Civil servants from the DTI's RTP division and the Treasury quietly studied publications of the Alvey Directorate and the Commission and came to several conclusions.[36] First, the Alvey Directorate was not administering Esprit effectively. As Chapter 6 showed, the Alvey Directorate was neglecting Esprit in an effort to protect its own Programme. Mr Corcoran realized this: 'It is natural that anyone with a budget wants to protect their budget. There was quite a blinkered approach to Community spending at the time'.[37] Second, Esprit and Alvey were duplicating one another and to an unacceptable degree. Third, the Alvey Directorate could not effectively administer both Esprit and Alvey. Perhaps the Alvey Directorate was not the appropriate organization to handle Esprit. According to Mr Oakley, 'talk of recapturing Esprit' began to 'rumble on' in the DTI.[38]

Together, civil servants from the DTI and from the Treasury formulated a way to establish control over the Alvey Directorate's administration of Esprit. This method became known as 'attribution' and worked in the following manner. Community spending levels in 1984 were taken as a base line and any growth over those figures was taken to represent an increased cost of financing the British contribution to the EC budget. Responsibility for particular areas of Community spending was allocated across departments, called 'lead' departments, and any increased cost of financing the Community budget in a particular area was taken out of, or 'attributed' to, the lead department's budget. The DTI was designated the lead department for Community research and development, thus any increase in Community R&D spending over 1984 levels would be subtracted from the DTI's budget. The 'attribution' formula was not finalized or formally applied until the Public Expenditure round of 1988 when it was applied to all Community spending, but *the Treasury was clearly looking for ways to establish control over Departmental expenditure on Community programmes.*[39]

---

[35] Interview, Dr Alastair Keddie.
[36] Interview, Mr Michael Corcoran.
[37] Interview, Mr Michael Corcoran.
[38] Interview, Mr Brian Oakley, 25 February 1982.
[39] Interviews, Mr Michael Corcoran; and Dr Alastair Keddie.

Concern over the Alvey Directorate's administration of Esprit was not limited to Whitehall. Westminster was worried as well. In late 1984, the House of Lords Select Committee on the European Communities devoted a hearing entirely to the administration of Esprit in the UK. The task they set themselves was to 'test the proposition that Alvey and Esprit do not duplicate but complement each other', 'because there is said to be a suspicion in the Community that the United Kingdom is less attached to Esprit than to Alvey....'[40] and because the 'existence of Esprit alongside Alvey-type national programmes raises questions of coordination and overlap, duplication of effort, proper allocation of resources and political cooperation'.[41] The Lords had certainly grasped the fundamentals of the Alvey Directorate's approach to Esprit.

The Committee took evidence from late 1984 through April 1985, at the height of the Alvey Directorate's vulnerability. The Lords concluded that Alvey and Esprit duplicated one another to a significant degree, despite the protestations of members of the Alvey Directorate,[42] and that the Alvey Programme was deterring British researchers from participating in some areas of Esprit, particularly advanced information processing and software engineering. The Lords concluded that, 'Greater efforts must be made to achieve effective coordination between Esprit and national programmes with similar aims so that there is no unnecessary duplication'.[43]

The concerns in Whitehall and Westminster were warranted. Chapter 6 showed that the Alvey Directorate had made no serious effort to coordinate the two programmes and guard against duplication. Moreover, the Directorate consciously tried to keep British companies and academics under the Alvey umbrella in areas where Alvey and Esprit overlapped.

The Directorate's standing was very precarious. It was being attacked for its own Programme. Its protective Minister had left. It was now in the docks for its handling of Esprit and the might of the Treasury, Westminster and RTP division was weighing against it.

7.4 An Alvey 2?

Despite the Directorate's uncertain standing, it started to press for a second, five year phase of Alvey. The Alvey Programme had been approved as a five year programme,

---

[40] House of Lords Select Committee on the European Communities, *ESPRIT*, 8th Report, Session 1984-85 (London: HMSO, 1985), p. xv.
[41] *Ibid.*, p. xxiv.
[42] Mr Oakley argued that the overlap was 'restricted to perhaps 25-30 per cent of the actual work'. Testimony of Mr Brian Oakley, *ibid.*, p. 2.
[43] House of Lords, *op. cit.*, in note 40, p. xxxvi.

but the Alvey Committee had envisioned a second five year phase to follow. In December 1984, the Alvey Steering Committee suggested that a committee to discuss Alvey 2 should be set up in the summer of 1985. The SERC also pressed for a continuation of Alvey. In April 1985, the SERC's Engineering Board concluded that an Alvey 2 was desperately needed in light of intensifying global competition in IT goods and services.[44]

These early soundings for an Alvey 2 were not met with positive responses. Mr Oscar Roith, the DTI Chief Engineer and Scientist, suggested that any programme called 'Alvey 2' would be a misnomer.[45] Mr Colin Fielding of the Ministry of Defence suggested that any follow up programme should be independent of Alvey in order not to give politicians the impression that Alvey would run forever.[46] The Minister for Information Technology, Mr Pattie, did not seem too enamoured with the idea either. Addressing the June 1985 Alvey conference, Mr Pattie threw cold water on an Alvey 2: 'I am sure the Government will want to encourage the continued cooperative endeavour in the U.K. Whether such support is needed in the form provided by Alvey, and with a U.K. focus, is not so clear. Industry cannot expect financial support to continue indefinitely.'[47] The insinuation was that Alvey should be replaced by Community programmes. *As Bureaucratic Politics would predict, the Alvey Steering Committee and Directorate stayed committed to an Alvey 2 despite the negative responses. An Alvey 2 promised future budgets and responsibilities. The first hypothesis holds.*

7.5 A Change of Heart

Facing intense criticism of its handling of Alvey and of Esprit and wishing to see a continuation of the Alvey Programme, members of the Alvey Directorate realized that Alvey 2 would not have a chance of being approved if it did not dispel Whitehall and Westminster's conclusions that Alvey and Esprit duplicated each other and that Alvey was preventing Britain from receiving her *juste retour. A new strategy toward Esprit was urgently needed in order to guarantee the future of Alvey and the budgets and responsibilities promised by it. The third hypothesis is accepted.*

The Directorate was quick to arrive at a solution. It would actively encourage and assist British institutions that received little or no funding from the Alvey

---

[44] Science Engineering Research Council, 'After the Alvey Program -- Academic Research in Information Technology', report by a Working Party of the SERC Engineering Board, March 1986.
[45] Brian Oakley and Kenneth Owen, *Alvey: Britain's Strategic Computing Initiative* (London: Massachusetts Institute of Technology Press, 1989), p. 230.
[46] *Ibid.*
[47] *Ibid.*, p. 232.

Programme, whether because they were SMEs or because they performed research in areas not covered under the Alvey Programme, to participate in Esprit. According to Mr Chris Barrow, 'We would advise someone who wanted to put something together for Esprit that was not covered in Alvey. There were certain Esprit programmes which had nothing to do with us. There, we advised people to go to Esprit.'[48] In this manner, duplication would be avoided, Alvey's weaknesses would be addressed and British *juste retour* would be achieved.

The Alvey Directorate referred to this strategy in the House of Lords hearing on Esprit. Two excerpts from their testimony follow.

> The scope of information technology research is wide. So far as the United Kingdom is concerned, neither Alvey nor Esprit is alone capable of meeting all our requirements. We need both programmes, so long as there is not any wasteful duplication between them. The Government's objective is to ensure that there is no such duplication. We shall seek to achieve this in the Esprit Management Committee in which the Director of the Alvey Programme represents the United Kingdom....and Alvey will be managed to take account of Esprit. For instance, Alvey will not start projects in areas where there is already adequate United Kingdom involvement in Esprit projects.[49]

> The Alvey Directorate is the formal technical link with the Esprit programme and takes particular interest in applications going from the United Kingdom to Esprit. It examines copies of these applications with a view to seeing whether there is duplication with work happening in another part of Europe on the Esprit programme and work Alvey intends to fund. So far as we are able, we excise any unnecessary duplication.[50]

The new strategy for avoiding duplication and achieving *juste retour* became an unwritten convention and members of the Directorate understood it to be the new *modus operandi*. In the spirit of the Alvey Directorate, this strategy was not accompanied by formalized decision-making procedures. When the Lords expressed concern with the lack of clear guidelines to ensure no duplication between the two programmes, Mr Oakley responded:

> I think, Chairman, one has to face somewhat reluctantly that we are going to have to handle the overlap pragmatically. It would be nice to have found areas where industry was clearly able to say, 'It is much better to handle this within the United Kingdom', or, 'It is much better to handle this in Europe'. It appears

---

[48] Interview, Mr Chris Barrow.
[49] Memorandum submitted by the Department of Trade and Industry, House of Lords, *op. cit.*, in note 40, pp. 184-85.
[50] Testimony of Dr David Thomas, House of Lords, *op. cit.*, in note 40, p. 71.

that the world is not that simple....to establish in abstract any such guidelines I am afraid has not proved a practical proposition.[51]

Because the Alvey Directorate's new role was in 'orchestrating the U.K. input to ESPRIT',[52] the Directorate was reorganized. Mr Roger Hird was promoted to a G5 rank from the DTI's Microelectronics and Electrical Engineering division to replace Dr Walker, who was moving to the Policy Planning Unit, as Director of Administration. Mr Hird was given responsibility for Esprit and he became Mr Oakley's counterpart on the Esprit Management Committee. Mr Hird was assisted by a G7, Ms Caroline Varley (she was later replaced by Mr John Head-Rapson) who was helped by five other civil servants. Six civil servants were now allocated full-time to Esprit. Compare this to the three earlier in Alvey's life.

Mr Hird recognized the importance of Esprit and devised a more coherent strategy for assisting British participants in Esprit. Efficient dissemination of Esprit information was paramount. The Alvey Directorate invited the Commission to attend the annual Alvey conferences and recruit British participants. The Alvey Directorate also undertook to educate British researchers about Esprit. Much of the *Alvey Newsletter* was devoted to Esprit issues. The text of the Commission's calls for Esprit proposals, which were published on the *Official Journal*, were reprinted in the *Alvey Newsletter* as were DGXIII press releases. Mr Hird and Ms Varley augmented the official publications with their own interpretations of Esprit issues. Their commentary appeared in the *Alvey Newsletter* and in the DTI's publication, *British Business*.

Such insider information was invaluable to British researchers because the Commission had not established an effective mechanism for disseminating information.[53] Even if an effective mechanism had been designed, the Commission was extremely protective of information. For example, the content and timing of a call for proposals were known only to the Commission. Member states' representatives were not consulted or informed. At a time known only to it, the Commission would publish a call for proposals in the *Official Journal*. The call was very specific, giving tightly defined project areas to be funded. Interested researchers were expected to submit a proposal within two months of the call. The timing was impossible for some. Because the Commission would fund only those projects set out in its call, interested parties had to wait for the formal call before they could begin designing proposals. A quality

---

[51] Testimony of Mr Brian Oakley, House of Lords, *op. cit.*, in note 40, p. 3.

[52] Oakley and Owen, *op. cit.*, in note 45, p. 112.

[53] The 1985 mid-term review was highly critical of the Commission's communication structures and procedures. Commission of the European Communities, 'Concerning a Review to Assess the Initial Results of the Programme ESPRIT', Com (85) 616 final (Brussels: Commission of the European Communities, 19 November 1985).

proposal, however, often required more than two months preparation. If a potential applicant had some idea of the timing and content of a call, it could get a head start and design a high quality proposal and increase its chance of receiving funding. Insider knowledge was an invaluable defence against the Commission's inefficient information dissemination.

For some Esprit participants, the only source of such information was the Alvey Directorate. The Directorate was able to gather 'insider' information through several means. Mr Hird and Mr Oakley sat on the Esprit Management Committee (EMC). Although the EMC was not formally told of the timing and the content of calls, EMC members were able to extract clues from Commissioners. Mr Oakley and Mr Cadiou met frequently outside the formal Esprit mechanisms to discuss Alvey and Esprit.[54]

Mr Hird and Mr Oakley also had people on the 'inside'. In 1984, the Commission asked the Alvey Directorate to suggest someone to direct Esprit's software programme. The Alvey Directorate recommended Mr John Elmore, who was active on Alvey's software engineering advisory board.[55] When Mr Elmore left the Commission, he was replaced by Mr David Talbot, who had been the director of Alvey's software engineering sub-programme. Commission decisions were not compromised by the men, but they could steer members of the Alvey Directorate in the right direction. As Mr Talbot suggested, 'Areas of interest in Esprit and Alvey more or less completely overlapped. It was our policy, so to speak, to make sure that we didn't do silly things like funding a company twice to do the same work. There was liaison at a very detailed level'.[56]

The Alvey Directorate gathered information by maintaining close relations with British members of the Esprit Steering Committee and Esprit Advisory Board. Generally speaking, members of these two bodies were actively involved in Alvey decision-making processes, whether through the Alvey Steering Committee, through Alvey advisory boards or working groups. They were also, generally speaking, from firms or universities that received large amounts of Alvey funds. Because these two bodies worked with the Commission to devise the technical content of the calls, the Alvey Directorate was able to gather intelligence on the likely content of calls from these representatives.

Finally, the Alvey Directorate took a great interest in the people invited to Brussels to evaluate project proposals. In his testimony before the Lords, Mr Oakley

---

[54] Testimony of Mr Jean Marie Cadiou (Director, Esprit, DGXIII), House of Lords, *op. cit.*, in note 40, p. 143.
[55] Interview, Mr David Talbot.
[56] Interview, Mr David Talbot.

made reference to the Directorate's new found interest in Esprit evaluation teams: 'In the Directorate we see it as our responsibility to help British industry to be kept well informed of what is going on in Esprit, to act as a sort of central link, and I am pretty confident that one of the messages we will be bringing to them after this year's evaluation exercise is through is that they must make more effort to release people for the evaluation stage.'[57] The Directorate often recommended qualified candidates to the Commission for inclusion in evaluation teams. Often those people were or had been involved in Alvey. For example, while he was director of Alvey's software engineering sub-programme, Mr Talbot served as an evaluator for the Commission. If the Commission appointed an evaluator that was not recommended by the Directorate, the Directorate would 'go out of its way to get to know that person'.[58] When the British evaluators returned to the UK from Brussels, they 'briefed' the Alvey Directorate on Esprit news they picked up. The Directorate passed information gathered through these numerous sources on to potential British participants.

Mr Hird and his assistants also tried to re-educate the Alvey directors to the importance of Esprit. During the first year and a half of Alvey, sub-programme directors had been instructed to concentrate on Alvey. They could no longer, however, afford to ignore or belittle Esprit. Esprit had become Alvey's life-line.

It was necessary to bring the sub-programme directors around because they had the technical expertise and knowledge of Esprit that were required to assist potential participants design Esprit proposals. According to Mr Hird:

> Alvey had a tremendous network of contacts through its advisory boards and its committees which were made up of the great and the good of UK IT. We expected the [Alvey sub-programme] directors to use their contacts and their own stored knowledge to design Esprit and Alvey strategies. The directors had a considerable degree of knowledge of Esprit and where the money was.[59]

Mr Hird found bringing the Alvey sub-programme directors around to Esprit a difficult feat: 'I had to pound it into the heads of the sub-programme directors that Esprit was important....'[60] Mr Oakley did not sense the same degree of resistance.

> I don't think any of them felt any resistance to the gradual growth and importance of Esprit....we used to have long discussions about what the relative balance should be. How do you balance them? I think the Directorate as a whole readily agreed that Esprit had become the dominant thing, but there

---

[57] Testimony of Mr Brian Oakley, House of Lords, *op. cit.*, in note 40, p. 10.
[58] Interview, Mr Brian Oakley, 2 June 1992.
[59] Interview, Mr Roger Hird, 28 October 1992.
[60] Interview, Mr Roger Hird, 28 October 1992.

> was still the feeling that there were things which needed to be done nationally. It was getting the balance of those right.[61]

Dr Thomas recalled the change in orientation. When the Alvey Programme began, 'There was a very real danger that our best universities would be picked off by German and French companies in Esprit. If this happened, it would positively be helping the competition in Europe because, as you know, there was collaboration but there was also competition'. This attitude changed. 'People felt that organizing UK universities and companies would help them secure Esprit contracts. We did not see ourselves in competition with Esprit. We saw ourselves as organizing British interests for working in Esprit.'[62]

The Alvey sub-programme directors were brought around and took a very active role in assisting British researchers with Esprit. The Directorate helped researchers find consortium partners: 'We feel that the Directorate can help to bring about these marriages in Europe....We can act to some extent as a lubricant in the process.'[63] They helped researchers design Esprit proposals.[64] They examined copies of Esprit project proposals and suggested amendments. According to Dr Thomas,

> Within the Alvey programme we keep very close contact with these companies and advise them to make sure there is a good national coverage in bidding for Esprit projects and also no duplication. Yes, we do, through the Alvey Directorate, have intimate contact with the companies in the areas where the bidding is taking place.[65]

As an interviewee from ICL recalled, 'With most of our proposals the DTI [Alvey Directorate] knew what we were doing and we got the "that's good" before we submitted it'.[66] Mr Duguid recalled sitting in on meetings of the Alvey Directorate where, 'there was consideration of the duplication and waste of effort which would result from companies applying for Alvey and Esprit funding at the same time...'.[67]

The Alvey Directorate even went so far as to turn some Alvey project proposals into Esprit projects by 'adding a European partner'.[68] As Mr Hird recalled,

---

[61] Interview, Mr Brian Oakley, 2 June 1992.
[62] Interview, Dr David Thomas.
[63] Testimony of Mr Brian Oakley, House of Lords, *op. cit.*, in note 40, p. 10.
[64] Interviews, Mr Chris Barrow; Mr Brian Oakley, 2 June 1992; Mr Roger Hird, 28 October 1992; Mr Robert Morland; Mr David Talbot; and Dr David Thomas. Testimony of Mr Brian Oakley, House of Lords, *op. cit.*, in note 40, p. p. 10; Memorandum Submitted by the Department of Trade and Industry, House of Lords, *op. cit.*, in note 40, pp. 182-198.
[65] Testimony of Dr David Thomas, House of Lords, *op. cit.*, in note 40, p. 77.
[66] Interview, Mr David Dace.
[67] Interview, Mr Andrew Duguid.
[68] Interviews, Mr David Dace; and Mr Chris Barrow.

'Toward the end, we were taking Alvey proposals and putting them directly into Esprit. The Esprit Flagship project is one of these'.[69]

Mr Hird and Mr Oakley lobbied on behalf of British participants in meetings of the EMC. As Mr Oakley saw it, 'In a sense, what was the Alvey Esprit team for? It was to maximize the return of the programme to the UK....It was essentially there to help UK industry get its return'.[70] An interviewee from British Aerospace suggested that her company would approach the Alvey Directorate saying, 'I have all these proposals here and I am particularly interested in this. The DTI [Alvey Directorate] would then work through particular Commissioners to get it accepted'.[71]

Although the UK was only one among ten (and twelve after January 1986) other member states pursuing their interests in the EMC, the UK was particularly successful. Mr Oakley suggested that he and Mr Hird were successful on the EMC because they were always the best briefed members of the EMC. Other member states' representatives were not well prepared or did not seem to take Esprit seriously. As Mr Oakley put it, 'I'm not being big headed about it, but when you looked around the table, with a few honourable exceptions, the quality of the Management Committee was very low. Governments throughout Europe really put very little effort into the Committee and things'.[72]

7.6 British Policy in Esprit: Getting UK *Juste Retour*

Recall from Chapter 6 that Ministers articulated several objectives in Esprit: limit the size of the Esprit bureaucracy and ensure efficient management, limit the Esprit budget and achieve *juste retour*. From 1983 to late 1984, the Alvey Directorate did not pursue any of those objectives over which it had some control. How did the Directorate fare during the period examined in this Chapter?

The Alvey Directorate made no attempt to limit the size of the Esprit bureaucracy or ensure that it operated efficiently. Given the fact that the Brussels bureaucracy was mushrooming and in a rather covert and under-handed manner, the Alvey Directorate certainly could have taken up this issue. DGXIII was large and ineffective, as the mid-term review of Esprit showed. An explanation for the Directorate's behaviour on this score lies, once again, in the fact that it was not in the Directorate's interest to make an issue of the operations of the Commission. DGXIII may have been inefficient, but to highlight this fact would have brought scorn down on

---

[69] Interview, Mr Roger Hird, 28 October 1992.
[70] Interview, Mr Brian Oakley, 2 June 1992.
[71] Interview, Ms Angela Mison Fulleylove.
[72] Interview, Mr Brian Oakley, 2 June 1992.

the Alvey Directorate itself -- and its critics were lying in wait. *In the interests of self-preservation, the Alvey Directorate ignored a Ministerial objective.*

As regards limiting the size of Esprit's budget, the Directorate once again had little role to play. The Commission had made a bid for a much increased Esprit II budget, but the financial issues surrounding Esprit were the prerogative of the Council of Ministers. Mr Pattie would represent British interests and those interests, as had been the case with Esprit I, would be determined by him and Mrs Thatcher.

The Directorate did pursue *juste retour. I argue that it did so not out of concern for Ministerial interests, but for self-preservation.* Esprit needed to be taken seriously because it had become Alvey's life-line. The desire to guarantee the budget of an Alvey 2 and responsibilities for those who would implement Alvey 2 were foremost in the minds of Alvey directors. In order to do so, the Alvey Directorate had to disarm its critics by achieving juste retour for Britain. *The preference-from-position holds and the third hypothesis is accepted.*

From late 1984, the Alvey Directorate attempted to fill gaps in the Alvey Programme and, at the same time, achieve a *juste retour* for the UK by encouraging British researchers to work in Esprit. *This was Britain's de facto policy in Esprit. Bureaucratic competition did affect British policy in Esprit.* The Alvey Directorate identified areas of weakness in Alvey, both in terms of participation and technical coverage. In areas where Alvey was weak, British participation in Esprit was encouraged. The statistics presented below bear this out.[73]

---

[73] Member states seek a return from Community programmes, including Esprit, that is greater than or equal to their contribution to that programme. The accounting surrounding this seemingly simple rule is not as straightforward as one might expect. This is so for several reasons. First, member states do not contribute directly to individual Community programmes. Rather, they contribute to the overall budget of the Community, from which funding for individual programmes is allocated. Thus, the UK does not contribute directly to Esprit, but does so indirectly through its contribution to the general Community budget. During the period under observation, the British contribution to the Community budget was fiercely contested and the rebates Mrs Thatcher secured made for a fluctuating overall contribution, causing *juste retour* calculations to change with it. Second, it is difficult to know exactly how much Esprit funding actually ends up in the bank accounts of British organizations. Although a contract signed with a British researcher is recorded as a British contract, that researcher may then sub-contract the work to a French researcher, for example, without the record being changed. Neither the Commission nor Whitehall departments are able to keep close tabs on these arrangements or the monetary flows involved. Third, Esprit funds flow both to public and private organizations in the UK. For example, when a contract is signed between the Commission and GEC or London University, funds are transferred to the private sector. On the other hand, when the SERC's Rutherford Appleton Laboratory receives Esprit funding, the transfer is to a public organization. When publishing statistics, the Commission does not distinguish between the two, but from the British government's point of view, should funds received by the public and private sector or just the private sector be included in *juste retour* calculations? During the period under investigation, an answer to this question was not reached in the Treasury or in the DTI. Finally, because *juste retour* is highly sensitive politically, the Commission does not provide statistics in a format conducive to accurate *juste retour* calculations. Only a rough indication of *juste retour* can be gleaned. As a result, calculations of *juste retour* must be based on two sets of statistics which can be obtained from the

As Table 7.1 reveals, British participation rates in Esprit I were high. British researchers participated in 69 per cent of all Esprit projects. (Only France and Germany had comparable figures.[74]) Participation rates were not uniform, however, across the different technical sub-programmes. British researchers were most involved in the Microelectronics and Software Engineering sub-programmes and least involved in the Advanced Information Processing and CIM sub-programmes. Variances in the large sub-programme categories, as well as variances within elements of the sub-programmes, can be explained by reference to the Alvey Directorate's policy of leading British researchers to Esprit when Alvey could not meet their needs.

Table 7.1: UK Esprit Project Involvement by Technical Area

Technical Area	Total Esprit Projects	Projects with UK Involvement	% of Total Projects with UK Involvement
Advanced Microelectronics	49	37	75
Software Engineering	48	34	71
Advanced Information Processing	51	34	66
Office Systems	45	31	68
Computer Integrated Manufacture	33	20	61

Source: Compiled from Paul Hare, *et. al.*, *Assessment of Esprit in the UK* (London: HMSO, 1989), p. 27 and p. 59.

7.6a Software Technology

As Chapter 5 revealed, Alvey's software engineering programme was not an overwhelming success. Small to medium sized British software houses were poorly represented, while academics received most of the funds. Industrial/academic collaboration was not generated and industrial take-up of academic research was poor. Many of the overly ambitious goals were not met. Two important elements of Software Technology that were left out of Alvey were included in Esprit: Management and Industrial aspects and Evaluation and Demonstration. Despite these weaknesses,

---

Commission: number of participants from individual member states and the number of projects in which member states' participants were involved. These figures are taken as indicative of *juste retour.*

[74] Paul Hare, *et. al.*, *An Assessment of Esprit in the UK* (London: HMSO, 1989), p. 59.

Alvey was strong in two elements: Theories, Methods and Tools and Common Environment.

In areas where Alvey was weak, the Alvey Directorate made every effort to encourage participation of British software houses in Esprit.[75] British participation in Esprit's Management and Industrial area was high, with British researchers representing 33 per cent of the main contractors and 39 per cent of all participants.[76] Alvey did not fund research in this area.[77] British participation in the Evaluations and Demonstrations area was also high, with British researchers representing 25 per cent of all main contractors and 21 per cent of all participants. Again, Alvey was weak in this area, only funding four demonstrator projects.[78]

In the area of Theories, Methods and Tools on the other hand, 'there can be little doubt...that the size of the Alvey push in this area distracted potential applicant's attention from the Esprit opportunities'.[79] Similarly, British participation in Esprit's Common Environment programme was low. Of the 11 projects funding by Esprit, only one involved a British researcher as a main contractor and British researchers comprised only 21 per cent of all researchers.[80] Alvey placed a high priority on creating a common software environment, but Alvey's goal was to create a common environment in the UK rather than across Europe. Given this national orientation, Alvey Directors were keen to see British companies working in Alvey rather than Esprit.

7.6b Computer Integrated Manufacture (CIM) and Office Systems

Testifying before the House of Lords, Mr Oakley suggested the following relationship between Alvey and Esprit in the areas of CIM and office systems.

> The degree of overlap of the two is by no means complete. The Esprit programme spreads considerably wider than the Alvey Programme. In particular, two of the five segments of the Esprit Programme, those are the applied ones, one is in office systems and the other is in computer integrated manufacture, do not have a direct equivalent in the Alvey Programme.[81]

---

[75] Interview, Mr David Talbot.
[76] Hare, *op. cit.*, in note 74, p. 51.
[77] Hare, *op. cit.*, in note 74, p. 50.
[78] Hare, *op. cit.*, in note 74, p. 50.
[79] Hare, *op. cit.*, in note 74, p. 50.
[80] Hare, *op. cit.*, in note 74, p. 51.
[81] Testimony of Mr Brian Oakley, House of Lords, *op. cit.*, in note 40, p. 2.

Although Alvey had no direct equivalent to Esprit's office systems, some of Esprit's coverage was duplicated in Alvey's MMI sub-programme. It could be expected, therefore, that British participation in Esprit would be something of a mixed bag. Statistics bear this out. Figures in Table 7.1 reveal a relatively high number of projects involving British researchers. Analysts explain this pattern by reference to the lack of coverage in Alvey.[82] Nevertheless, participation across the entire sub-programme was by no means uniform. Once again, participation in Esprit was low in areas covered by Alvey (Advanced Workstations and Human-Machine Interface and Integrated Office Information Systems) and high in areas not covered by Alvey (Office System Science and Human Factors, Communication Systems and Advanced Multi-Media Information Storage and Retrieval Systems).[83]

As regards UK participation in CIM, figures in Table 7.1 reveal that the number of Esprit projects involving British researchers was lower here than in any other sub-programme. Moreover, of the six elements comprising Esprit CIM, three of them involved no British participants as main contractors and of the total number of participants, only 17 per cent were British.[84]

If the logic employed above to analyze British participation in Esprit was applied to CIM, it could be expected that Alvey was strong in the CIM area because Alvey directors tried to keep British researchers under the Alvey umbrella. This is not the case, however, because Alvey did not have a CIM sub-programme. What prevented high levels of British participation in Esprit CIM was the availability of research funds at the national level through programmes other than Alvey. British academics researching CIM were being funded by the SERC under its ACME (Advanced Computers in Manufacture Engineering) programme while the DTI funded industrial research through Mr John Major's LA Division. Mr Major had been isolated and excluded from the structures through which the Alvey directorate gathered, analyzed and disseminated Esprit information. Interviewees suggested that because CIM was not handled in the Alvey Directorate, there was no mechanism through which potential CIM participants could be led to Esprit, hence the low participation rates.[85]

7.6c Advanced Information Processing (AIP) or IKBS

British participation in Esprit AIP was lower than in all technical areas other than CIM. The reason for this is that Alvey funded a large amount of research in this area.

---

[82] Hare, *op. cit.*, in note 74, p. 54.
[83] Hare, *op. cit.*, in note 74, p. 53.
[84] Hare, *op. cit.*, in note 74, p. 55.
[85] Interviews, Mr Roger Hird, 28 October 1992; and Mr Derek Flynne, 3 December 1992.

Although the original level of funding under Alvey for IKBS was low relative to other Alvey sub-programmes, Chapter 5 showed that more funds were allocated to IKBS than was originally budgeted. In fact, IKBS proved to be one of Alvey's most successful programmes. However, in Esprit's Computer Architectures areas of AIP British participation was high. (Participation in this area accounts for the figures in Table 7.1.) Again, the commendable British participation in this element of Esprit was caused by a gap in the Alvey programme. Alvey did not fund research in architectures until 1986 when the Systems Architecture element was added. According to Oakley,

> We started an Alvey study, it was South Hampton and RSRE, there must have been MIGA or some computer firm. We actually funded the study, but the main project appeared as an Esprit project quite early on in Esprit, probably the second round in Esprit I....The thing is complex, but we didn't have an architect programme in Alvey in the first place. It was a mistake. There should have been one. But we didn't have it and so there wasn't an obvious slot.[86]

7.6d Microelectronics

Table 7.1 reveals that British researchers were involved in 75 per cent of all Esprit microelectronics projects -- a higher proportion than any other Esprit sub-programme. Tables 7.2 and 7.3 reveal that British hardware firms represented 24 per cent of all British participants in Esprit, but received 49 per cent of all Esprit contracts awarded to British researchers. Compared to Esprit as a whole, the participation of British hardware firms was low,[87] but British hardware firms held double the number of contracts than the next closest British organization type, which was universities. Table 7.4 reveals the extreme concentration of Esprit contracts in a very small number of British hardware firms. With very few exceptions, only firms that were among the largest' recipients of Alvey funding participated to any significant degree in Esprit. In fact, the top four British Esprit contract recipients were also the top four Alvey contract recipients and they were Britain's largest hardware manufacturers. GEC alone held nearly 17 per cent of all Esprit contracts involving British researchers.

---

[86] Interview, Mr Brian Oakley, 2 June 1992.

[87] This was to be expected because the number of British hardware firms was low relative to the rest of Europe.

Table 7.2: Esprit Participation Levels by Organizations of a Given Type

Participant Type	% of total British Participants	% of total Esprit Participants
Universities	32 (+ 37 %)	23.3
Research Organizations	11 (- 17%)	13.3
Hardware Firms	24 (- 22%)	30.6
Software Firms	14 (- 26%)	18.9
Other Firms	19 (+ 37%)	13.9

Note: Numbers in brackets are the percentage difference between UK statistics and Esprit statistics.
Source: Compiled from Paul Hare, *et. al.*, *Assessment of Esprit in the UK* (London: HMSO, 1989), p. 28 and p. 45.

Table 7.3: Esprit Contract Holdings by Organizations of a Given Type

Participant Type	% of total British Contracts	% of total Esprit Contracts
Universities	25 (+ 11%)	22.5
Research Organizations	8 (- 41%)	13.6
Hardware Firms	49 (+ 15%)	42.5
Software Firms	8 (- 42%)	13.8
Other Firms	10 (+ 32%)	7.6

Note: Numbers in brackets are the percentage difference between UK statistics and Esprit statistics.
Source: Compiled from Paul Hare, et. al., *Assessment of Esprit in the UK* (London: HMSO, 1989), p. 28 and p. 45.

Table 7.4: Esprit and Alvey Contracts Held by British Industrial Participants

Firm	Number of Alvey Contracts	Number of Esprit Contracts
GEC	66	45
ICL/STC/STL	68	35
Plessey	39	15
British Telecom	31	14
Ferranti	18	3
Logica	16	3
Software Sciences/Thorn EMI	11	3
Systems Designers Limited	10	0
Racal	9	0
British Aerospace	7	5
Plasma Technology	6	2
Mari Advanced Microelectronics	3	4
CAP	2	3
Scicon	2	3
AMTRI	0	2
Barr & Stroud	0	2
BICC	0	2

Source: Compiled from Paul Hare, *et. al.*, *Assessment of Esprit in the UK* (London: HMSO, 1989), p. 28 and p. 45; and Ken Guy, *et. al., Evaluation of the Alvey Programme for Advanced Information Technology* (London: HMSO, 1991), p. 27 and Appendix.

7.6e Hardware Firms

The exceptionally high number of contracts held by a relatively small number of British hardware firms can be explained partially by reference to the factors relevant to British participation in the other Esprit sub-programmes. The Alvey Programme had no equivalent to Esprit's gallium arsenide or standards research. Also, the Alvey Programme's CAD for VLSI element was very weak. In these three areas the Alvey Directorate could clearly identify gaps in Alvey and address them by encouraging researchers to move to Esprit. Predictably, British participation in these areas of Esprit was high.[88]

This explanation, however, applies to a small portion of British participation in Esprit microelectronics. The fact is that, aside from these three areas, Esprit and Alvey covered virtually identical areas of research. British hardware firms participated simultaneously in Alvey and in Esprit in identical areas of research (but not on identical projects). As a result of the technical similarity between Alvey VLSI and Esprit VLSI, the Alvey Directorate was not able to lead British researchers to Esprit in areas where Alvey was weak. There was hardly a point in doing so, however. In its VLSI sub-programme, the Alvey Directorate was not faced with the possibility of British researchers moving *en masse* to Esprit and leaving Alvey funds uncommitted and hence vulnerable to Treasury claw-back. Approximately 80 per cent of the Alvey VLSI funds had been committed by the time the first Esprit I contract was signed. An explanation of the participation of British hardware firms in Esprit must be explained in terms other than 'gap management' as a means to *juste retour*.

The explanation may be found in bureaucratic political considerations. In order to fend off criticism, the Alvey Directorate needed to ensure that Britain received her *juste retour* from Esprit. To do so, the Alvey Directorate needed to assist British researchers in their efforts to obtain Esprit funds. The most effective way of doing so was to make use of contacts that had been established and nurtured through the Alvey Programme. As Chapter 5 revealed, the Alvey directors had closest contact with Britain's largest companies (which were primarily hardware manufacturers). In fact, many of the Alvey directors were seconded from those companies. Because most of Alvey's VLSI funds had been committed, Esprit did not pose as direct a threat to Alvey as did the other Esprit sub-programmes. By encouraging British hardware manufacturers to turn to Esprit, the Alvey Directorate could ensure *juste retour* for Britain without harming its own programme. *Action channels were again at work*

---

[88] Hare, *op. cit.*, in note 74, p. 46.

helping to determine the manner in which the Directorate's own interests were pursued. The fifth hypothesis holds true.

High levels of participation in Esprit among Britain's hardware firms would virtually guarantee Britain's *juste retour.* The reason is two-fold. First, Alvey strengthened the five British chipmaker's production capability in CMOS and bipolar devices to such a degree that they were well positioned to take advantage of Esprit in those areas.[89] Second, Esprit was essentially built for and by Europe's large, hardware firms. Europe's largest industrial concerns (most of which had VLSI capability) were represented in the Esprit decision-making process through the Esprit Advisory Board and the Esprit Steering Committee. Moreover, 75 percent of Esprit projects, type 'A' projects, are designed according to their strategies. Further, because only the large industrial concerns could afford to release valuable employees, many of the 'technical' staff of DGXIII were seconded from Europe's largest companies. With these factors in their favour, the large firms were bound to receive the lion's share of Esprit funding. Statistics bear this out.

Table 7.5: Participation of the Roundtable 12 Companies in Esprit I

Company	Number of Esprit Projects
GEC (UK)	45
Bull (France)	38
Thomson (France)	37
STET (Italy)	36
Philips (Netherlands)	34
STC (UK)	33
Olivetti (Italy)	29
Siemens (Germany)	27
CGE (France)	27
AEG (Germany)	25
Plessey (UK)	15
Nixdorf (Germany)	13

Note: These projects represent 73 per cent of all Esprit projects.
Source: Paul Hare, *et. al., An Assessment of Esprit in the UK* (London: HMSO, 1989), p. 28.

7.6f Academic Participation

A similar pattern of Esprit participation to that which prevailed among British hardware firms can be found among British academics. As Table 7.6 reveals, the most active academic participants in Esprit were also the most active academic participants in Alvey.

---

[89] Hare, *op. cit.*, in note 74, p. 46.

Table 7.6: Esprit and Alvey Contracts Held by British Academics

Name	Number of Alvey Contracts	Number of Esprit Contracts
London University (London School of Economics, Imperial College, Queen Mary College)	43	10
University College London	17	6
University of Strathclyde	15	5
University of Manchester	18	4
Polytechnic of the South Bank	0	3
Cranfield Institute of Technology	1	3
University of Leeds	7	3
University of Southampton	20	3
Brunel University	0	2
Cambridge University	29	2
University of Stirling	0	2

Source: Compiled from Paul Hare, *et. al.*, *An Assessment of Esprit in the UK*, p. 46 and Ken Guy, *Evaluation of the Alvey Programme* (London: HMSO, 1991), p. 28.

Three factors account for the concentration of Esprit contracts in such a small number of universities. Two of the factors were independent of the Alvey Programme and its Directorate while the third was a direct result of the Alvey Directorate's action channels. Turning to the factors independent of Alvey, the first relates to the strength of the academic institutions. Academics from the institutions listed above were world renowned. For example, Robert Kowalski of Imperial College and Donald Michie at Edinburgh University were experts in the field of artificial intelligence. Moreover, these establishments were large enough to have the funding and administrative staff sufficient to absorb the large overheads involved in preparing Esprit project proposals and undertaking cross-border collaborative research. Second, representatives from many of these institutions had been involved in Esprit's creation (for example, Professor Brian Warboys from the University of Manchester had helped design Esprit's software technology strategy [90]) or were involved in its implementation. In October 1985, an independent review board to evaluate the progress of the first phase of Esprit was assembled. Academics from the following British educational establishments were invited to attend: Cranfield Institute of Technology, Hatfield Polytechnic, Leeds University, London University, Polytechnic of the South Bank, Queen Mary College and Strathclyde University. (Note the correspondence with the academic institutions appearing in the table above.)

The third factor contributing to the success of these academic institutions in Esprit relates to purposive action on the part of the Alvey Directorate. Note the

[90] Oakely and Owen, *op. cit.*, in note 45, p. 37.

correlation between Britain's highest Esprit contract holders and their participation in the Alvey Programme. Only three academic institutions holding more than one Esprit contract were not among Alvey's top academic funding recipients. As with the British hardware firms, the Alvey Directorate made good use of the contacts it had established with these select few academic institutions in which Alvey funds were concentrated. The Alvey Directorate assisted these select few institutions with their Esprit activities, but left other academic institutions to their own devices, which proved inadequate to guide them through the maze of the Commission bureaucracy. Once again, *action channels were allowing the Alvey Directorate to pursue its own interests.*

It is noteworthy that while most British academic institutions were simultaneously active in Esprit and Alvey, their Alvey work far outweighed their Esprit work. The reason: Alvey funded much more academic research than was originally planned. Funds were actually transferred from the DTI and from the MoD to cover the shortfall in the SERC's budget created when the Directorate approved far more academic research than was originally planned. Consequently, few academics found a need to turn to Esprit; Alvey provided a sufficient source of funds. Thus, in a sense, the Alvey Programme prevented academic institutions from participating in Esprit. The Alvey Directorate could not afford to allow its critics to wield this weapon, so it had to encourage some academic participation in Esprit. Predictably, Alvey directors encouraged academics to participate in Esprit in areas where Alvey was weak, primarily in the computer architectures element of Esprit's advanced information processing sub-programme and in CIM.[91]

7.6g Small and Medium Sized Enterprises (SMEs)

Recall that the Directorate was vulnerable to the criticism that Alvey was a carve up for Britain's largest firms to the exclusion of SMEs. It was here that the Directorate could have made best use of Esprit by concentrating their attention on getting British SMEs into Esprit. Ironically, however, it is here that the Alvey Directorate had the least success, as the tables below reveal.

[91] Hare, *op. cit.*, in note 74, pp. 51-54.

Table 7.7: Percentage of Organizations in Size Category

Category	% of UK Participants in Category	% of Total Esprit Participants in Category
Universities *	32 (+ 37%)	23.3
Small-Medium Small (500 or less employees)	31 (- 22%)	39.5
Medium (more than 500 but less than 5,000 employees)	18 (+ 5%)	17.1
Large (more than 5,000 employees)	19 (- 5%)	20.1

Note: * Universities were not assigned a size category in Commission statistics. Numbers in brackets are the percentage difference between UK statistics and Esprit-wide statistics.
Source: Compiled from Paul Hare, *et. al.*, *An Assessment of Esprit in the UK* (London: HMSO, 1989), p. 28 and p. 44.

Table 7.8: Percentage of Contracts Held by Organizations in Size Category

Category	% of UK Contracts Held by Participants in Size Category	% of Total Esprit Contracts Held by Participants in Size Category
Universities *	25 (+ 11%)	22.5
Small-Medium Small (500 or less employees)	15 (- 42%)	25.8
Medium (more than 500 but less than 5,000 employees)	13 (- 6%)	13.9
Large (more than 5,000 employees)	47 (+ 24%)	37.8

Note: * Universities were not assigned a size category in Commission statistics. Numbers in brackets are the percentage difference between UK statistics and Esprit-wide statistics.
Source: Compiled from Paul Hare, *et. al.*, *An Assessment of Esprit in the UK* (London: HMSO, 1989), p. 28 and p. 44.

Two factors account for the failure of the Alvey Directorate to lead a significant number of British SMEs into Esprit. First, the Alvey Directorate had not established strong contacts with British SMEs. Lacking strong links with SMEs, the Alvey Directorate could not provide assistance sufficient to guarantee that British SMEs received a substantial number of Esprit contracts.

Second, Esprit itself was structurally biased against SMEs. In terms of funding, SMEs were given a secondary role: only 25 per cent of Esprit projects, type 'B' projects, were designed to promote participation of SMEs. Further, SMEs were not fully incorporated into Esprit decision-making structures and processes. They were not members of the Esprit Steering Committee and although they were represented on the Esprit Advisory Board, interviewees attest that even in that forum their concerns were overshadowed by those of the larger firms.[92] The role of SMEs in Esprit was revealed

[92] Interviews, Mr Stephen Joseph, 24 July 1991; and Mr Herman Hauser.

in the 1985 mid-term review of Esprit. The review board received many complaints from SMEs about the structural biases against them. SMEs argued for a voice on the IT Roundtable and on the Esprit Steering Committee. The review board responded: 'In the considered view of the Review Board it would be impractical and unwise to enhance the representation on the Roundtable and Steering Committee and organizations wishing to have a say are urged to make use of existing means of consultation.'[93]

Despite the Alvey Directorate's inability to generate substantial involvement of British SMEs in Esprit, the Directorate was remarkably successful in other areas. In fact, British researchers received more Esprit funding than researchers from any other member state. According to Mr Talbot, 'The UK no doubt had the highest share of the thing which is never mentioned - *juste retour*'.[94] The *Financial Times* calculated, and the Commission confirmed, that for every £1 Britain contributed to the Community research budget, the Community spent £1.25 in Britain.[95] In gross terms, French and German researchers received more Esprit funding than British researchers, but when those funds are compared to their respective Government's contribution to the Esprit budget, Britain received the highest *juste retour*.[96] By providing assistance to firms and universities which fell within Alvey's action channels, the Directorate enabled Britain to achieve her *juste retour* in Esprit. At the same time, the Directorate was able to address some of the weaknesses in the Alvey Programme, which its critics so often discussed.

7.7 Getting Away With It (Again)

The Alvey Directorate's actions in Esprit were driven by its concern to see the future of Alvey guaranteed. As such, bureaucratic competition did affect British policy in Esprit. It did so because Ministers did not articulate consistent objectives, because Ministers did not exercise control or supervise the issue and Whitehall control and coordination mechanisms did not influence the Alvey Directorate.

7.7a Ministerial Objectives

Mrs Thatcher and Mr Baker had clearly articulated consistent objectives in Esprit. When Mr Pattie moved in, he did not articulate his own or reiterate those which had been developed by his predecessor. When asked during an interview what his

---

[93] Commission of the European Communities, *op. cit.*, in note 53, p. 38 and Annex I.
[94] Interview, Mr David Talbot.
[95] *Financial Times*, 30 March 1987.
[96] Hare, *op. cit.*, in note 74, p. 56.

objectives were in Esprit while he was Minister for Information Technology, he did not recall having any.[97] It is irrelevant whether this was the truth or whether Mr Pattie was merely being sarcastic. The fact is that he did not deem it necessary to provide objectives regarding Esprit for his civil servants.

7.7b Ministerial Control and Supervision

During Mr Pattie's tenure, members of the Alvey Directorate received no more Ministerial supervision than they had under Mr Baker. Mr Baker chose to give his civil servants free reign, but Mr Pattie was forced to by the sheer weight of work. Mr Pattie's time and energy were monopolized by negotiations over the Framework Programme budget, EUREKA and the European Space Agency.[98]

The Minister immediately responsible for Alvey and Esprit offered the Alvey Directorate little guidance and supervision. The environment at the Secretary of State's office exacerbated the vacuum left by Mr Pattie. From late 1984 through 1985, the DTI had two Secretaries of State: Mr Norman Tebbit and Mr Leon Brittan. Neither were able to establish control and dictate the direction of the Department, much less supervise the operations of a maverick organization tucked away in Millbank Tower. As Chapter 6 showed, Mr Tebbit was not an apt administrator and for an indication of Mr Brittain's leadership, one has to look only so far as the Westland affair.

Westland was a small British helicopter manufacturer that ran into financial difficulty in 1984. In order to raise the necessary capital, Westland needed a new majority shareholder. Sikorsky, an American company, or a European consortium were two possibilities. Mr Brittan, Secretary of State at the DTI, felt that decision of which partner to take on should be left to the Westland board. Mr Michael Heseltine, Secretary of State at the MoD, favoured a European consortium. Cabinet agreed that the Westland board should decide. Nevertheless, Mr Heseltine continued to lobby for the European consortium by writing to Lloyds Merchant Bank (advisers to the European consortium) of the weaknesses of the Sikorsky option. Mrs Thatcher responded to Mr Heseltine's break with the Cabinet decision by asking the Solicitor-General to write a letter to Mr Heseltine informing him of 'material inaccuracies' in the letter he had written to Lloyds. Miss Colette Bowe, the DTI's press officer, leaked portions of the Solicitor-General's letter that were damaging to Mr Heseltine to the Press Association. Mr Heseltine resigned from the Cabinet. The question everyone wanted answered was, Who authorized the leak? Mr Brittan? Number 10? The Prime

[97] Interview, Mr Geoffrey Pattie, 26 November 1992.
[98] Interview, Mr Geoffrey Pattie, 26 November 1992.

Minister herself? In the House of Commons, Mrs Thatcher admitted that the leak had been authorized by Mr Brittan after he had obtained the go-ahead from Bernard Ingham, Mrs Thatcher's Press Secretary, and Charles Powell, her Private Secretary. Mr Brittan was forced to resign from Cabinet. The Westland Affair harmed Ministerial authority in the DTI and across Whitehall, 'No official in future would know where he or she stood'.[99]

7.7c Whitehall Control and Coordination Mechanisms

Whitehall control structures at the Cabinet level and interdepartmental level were not functioning effectively. No improvements had been made to the mechanisms discussed in detail in Chapter 6. (The Treasury had designed, but not implemented, its attribution formula, which was meant to reign in on the Alvey Directorate.) The Alvey Directorate continued to operate independently.

As far as DTI control and coordination mechanisms, the situation had worsened. RTP was interested to exert control over the Alvey Directorate, but the attribution formula it was designing with the Treasury was not yet operational. The Directorate continued to function independently of the RTP, the Financial Resources Management division and STAMG. As far as Esprit issues were concerned, the Directorate had established a monopoly. It kept very close contact with Commissioners, on both a personal level and through formal structures such as the EMC. Mr Major had been side-lined. In fact, he had stopped attending the EMC meetings altogether. Mr Major's lack of influence was implicitly recognized by House of Lords: he was not called to give evidence in their Esprit hearing despite the fact that his gallium arsenide work overlapped with Esprit VLSI.

7.8 Conclusion

By late 1984, *competition in the DTI over budgets and responsibilities was endemic.* Criticism of the Alvey Directorate had reached such a feverish level that the chances of a follow on to the Programme were being undermined. In order to guarantee a future budget for Alvey and responsibilities for those who would implement it, the Directorate changed its strategy in Esprit. Survival depended on avoiding duplication and achieving *juste retour. Bureaucrats formulated objectives in Esprit that were designed explicitly to protect their future budgets and responsibilities.* Thus, Bureaucratic Politics' preference from position function applied. *The manner in which*

[99] Hennessy, *op. cit.*, in note 4, p. 305.

bureaucrats pursued those objectives in Esprit was largely a product of Alvey's action channels.

The objectives of the Alvey Directorate became Britain's *de facto* policy in Esprit. *This was so because Ministers failed to articulate consistent objectives, they failed to control or supervise Esprit issues and because Whitehall control mechanisms were ineffective.*

The Interim: 1986 Through 1987
Chapter 8

Chapter 6 showed that Ministers consistently articulated their objectives toward Esprit I, but their behaviour reduced those objectives to rhetorical significance. Chapter 7 revealed that the Minister for Information Technology failed to articulate objectives toward Esprit. Ministers in the DTI also failed to scrutinize and control Esprit issues. Further, Departmental and Whitehall control and coordination mechanisms were not adequate to reign in the Alvey Directorate. Consequently, civil servants responsible for Esprit's implementation did not pursue the objectives articulated by Ministers. Rather, they acted to further their own interests, which included protecting the budgets and responsibilities afforded to them by the Alvey Programme. The interests of civil servants, as opposed to those of Ministers, became a *de facto* British policy in Esprit I.

Although civil servants successfully used Esprit to shield themselves from criticism emanating from Whitehall and Westminster, they could not neutralize the threat that European R&D programmes themselves posed to the budgets and responsibilities garnered through Alvey. From early to mid-1986, numerous proposals were made for ambitious and costly European R&D programmes. At the same time in Britain, Ministers continued to 'roll back the frontiers of the state' and slashed the DTI's budget for national R&D programmes. Despite the cuts, civil servants helped prepare a proposal for a large, ambitious national IT R&D programme to follow Alvey and run alongside (and perhaps compete with) European programmes. Civil servants planned to draw large budgets and responsibilities from the proposed programme. This Chapter tests whether the Bureaucratic Politics perspective can explain why civil servants pursued a path that was clearly against the Government's commitment to reducing its involvement in industry.

In June 1987, seven months after the proposal for an Alvey 2 was submitted, a new Secretary of State was appointed to the DTI. Lord David Young was a businessman with a pro-European attitude and a philosophical commitment to 'rolling back the frontiers of the state'. The proposed programme for an Alvey 2 did not fit his sympathies. Accordingly, he and his junior Minister withheld their response to the Alvey 2 proposal. They did, however, approve the second phase of Esprit. This Minister was clearly intent on establishing a new departmental R&D policy that gave European R&D programmes priority over national ones.

Although Lord Young clearly intended to change departmental policy regarding European R&D, only the barest outlines of his new approach were discernible at this time. They were not formalized or well articulated. Further, although

Lord Young was clearly determined to make his mark on the department, he had not fully gained control over it. Finally, Lord Young did not, during his first six months in office, cure the organizational chaos characteristic of the DTI. His desire to reorganize the department was known, but at this point departmental control and coordination mechanisms remained in flux.

How would civil servants behave in this environment? The Bureaucratic Politics perspective as formulated by Allison and Halperin would expect bureaucrats to act to maximize their budgets and responsibilities. Thus, one would expect bureaucrats to lobby their Ministers to approve Alvey 2 (a programme they were instrumental in designing and which afforded them large budgets and responsibilities) and neglect Esprit because it was clearly a threat to their proposed programme.

While this thesis accepts the Bureaucratic Politics' basic proposition, it argues that while bureaucrats seek to maximize their budgets and responsibilities, those desires are mitigated when Ministerial objectives are consistent and well articulated, when Ministerial control is strong and when Whitehall control and coordination mechanisms are effective. During this period, Lord Young began to assert his control, his actions indicated a policy reorientation and he was committed to changing the structure of the department. This thesis' reformulation would expect to see these factors affect the actions of civil servants. Perhaps civil servants would pay Esprit greater attention than Allison and Halperin's formulation would allow.

8.1 European Initiatives

As early as 1985, evidence that IT initiatives on the European front might eclipse national efforts began to accumulate. The first clue was Mrs Thatcher's positive response to the EUREKA proposal. As discussed in Chapter 7, EUREKA was not a Commission programme and its participation was not limited to EC member states. Researchers from any West European country were eligible for funding. From Mrs Thatcher's point of view, EUREKA proved an attractive alternative to the ambitious programmes funded and implemented by the Commission.

The Foreign Office and the Treasury also gave EUREKA enthusiastic support. Eureka provided an avenue for the Foreign Office to establish a foothold in international science and technology issues while the Treasury saw it as an inexpensive alternative to EC programmes.[1] The DTI was quick to realize the importance of EUREKA and in March 1986, eight months before Eureka was approved, it agreed to

[1] The importance the government attached to Eureka was evidenced by the Prime Minister's presence at a inter-governmental ministerial conference on Eureka. *Computer Weekly*, 3 July 1986, p. 1.

subsidize half the costs incurred by British companies working on Eureka projects.[2] This subsidy would come from the department's existing budget. When viewed in the context of the DTI's shrinking R&D budget, EUREKA subsidies would cut into funding for national programmes. Mr Pattie effortlessly steered EUREKA through inter-Governmental negotiations and it was approved in November 1986.

While EUREKA was being negotiated, the Commission started to lobby for an increased R&D budget. In April 1986, it proposed to triple its R&D budget under the Framework Programme to ECU 10.3 billion (approximately £6.3 billion).

In May, the Commission submitted a discussion document to the Council proposing the second phase of Esprit. The document recommended a budget of ECU 2.2 billion (approximately £1.5 billion) -- three times larger than Esprit I.[3] Because the Community's contribution to Esprit II would come from the Framework Programme, Esprit II could not get underway until the Framework was approved.

8.2 R&D in the Department of Trade and Industry

While the Commission was lobbying to increase its R&D spending, the DTI's budget for R&D was cut substantially. (See Tables 8.1 and 8.2.) In 1984/85, the DTI's total R&D spend was £367.5 million. It was expected to fall to £355.7 million in 1986/87. In terms of industrial R&D, in 1984/85 the DTI spent £146.0 million; in 1986/87 it expected to spend £141.8 million. The decrease in DTI R&D funding was very dramatic in IT. The DTI spent £35.7 million in 1984/85 but planned to spend only £14.9 million in 1986/87. The DTI's industrial support was moving away from R&D and closer to the market.

Table 8.1: DTI Expenditure on R&D
(at constant 1985/86 prices, £millions)

Outturn		Estimates			
1984/85	1985/86	1986/87	1987/88	1988/89	1989/90
367.5	374.4	355.7	346.7	351.7	378.3

Source: Cabinet Office, *Annual Review of Government Funded R&D* (London: HMSO, 1987), p. 8.

[2] *Guardian*, 14 March 1986, p. 19; *Financial Times*, 14 March 1986, p. 8.

[3] Commission of the European Communities, 'Communication from the Commission to the Council: The Second Phase of ESPRIT', Com (86) 269 final (Brussels: Commission of the European Communities, 21 May 1986).

Table 8.2: DTI General Industrial R&D Expenditure by Subject Area
(at current prices, £millions)

	Outturn		Estimates	
Subject Area	1984/85	1985/86	1986/87	1987/88
Alvey Directorate	5.5	12.7	28.5	29.2
Electronics	4.8	5.5	6.7	9.5
	32.6	32.6	21.3	24.6
Information technology	35.7	26.8	14.9	24.6
Telecommunications	---	3.7	1.7	1.9
Mechanical engineering and manufacturing technology	21.2	21.1	17.8	14.2
Textiles, materials, chemicals	13.4	12.6	13.9	10.6
Metals and minerals	5.5	5.8	7.1	7.3
Maritime technology and shipbuilding	6.2	6.5	4.5	6.3
Electrical engineering	3.0	4.0	3.5	4.0
Vehicles	12.0	9.5	8.5	9.3
Biotechnology	2.9	5.9	6.1	7.2
Public purchasing	0.1	---	0.5	0.7
SMART	---	---	0.3	0.5
Measurements	---	1.1	1.5	1.4
Other industrial R&D	1.4	1.0	1.9	3.9
Air	---	1.8	2.2	0.7
Total General Industrial R&D	146.0	152.3	141.8	157.6

Source: Cabinet Office, *Annual Review of Government Funded R&D* (London: HMSO, 1987), p. 10.

The shift away from support for industrial R&D was not part of a well-formulated and coherent departmental policy. However, the message behind the numbers, combined with proposed increases in the Community's R&D budget, did not bode well for a national programme to follow Alvey. Indeed, in a December 1985 interview, Mr Pattie, who was well aware of the Alvey Directorate's hopes for an Alvey 2, suggested that UK companies could not hope to compete on their own in world markets: 'We can select niches to gain success, but the UK market is puny in world terms.' Mr Pattie regarded a national focus as futile; alliances with European companies were the only hope for British IT: 'We are putting a lot of effort into the European dimension. I suppose I am "Mr Eureka" and I very passionately believe in European projects so the companies can become players on the world stage.'[4] These were reported to be sentiments widely held in the DTI and Westminster.[5]

[4] *Electronics Times*, 12 December 1985, p. 27.
[5] *Ibid.*

8.3 IT86 Committee Deliberations

Despite the factors mitigating against an Alvey 2, the Alvey Directorate was determined. It launched its formal campaign for an Alvey 2 on 4 February 1986 by announcing that Sir Austin Bide, chairman of Glaxo and former Chairman of British Leyland, would chair a committee to consider a national IT strategy to follow Alvey. The IT86 Committee, as it was called, was comprised of 22 members who were appointed by Sir Robert Telford, Chairman of the Alvey Steering Committee, before Sir Austin was appointed.[6] This committee spawned a number of subcommittees, which involved some 180 academics, industrialists and civil servants.[7]

Civil servants were well represented on the committees. Among them were: Mr Brian Oakley (Director of the Alvey Programme); Mr Alastair Macdonald (who had been promoted to Deputy Secretary in charge of IT and LA divisions); Mr John Major (who was still Under Secretary in LA division and was later succeeded by Dr John Thynne); Dr WB Willott (who succeeded Mr Macdonald as Under Secretary of IT division); Mr Roger Hird (Director of Administration in the Alvey Directorate); Ms Caroline Varley (a G7 who handled Esprit issues in the Alvey Directorate and was succeeded by Mr John Head-Rapson); Mr Robert Morland (Director of Alvey VLSI); Mr Laurence Clarke (Deputy Director of the Alvey Programme); Mr David Talbot (Director of Alvey Software Engineering); and four other DTI officials. Also attending were one civil servant from the MoD and one from the SERC. Dr David Thomas, Director of Alvey IKBS represented the SERC on the Committee.[8] Note the high proportion of members from the Alvey Directorate.

Although most of these civil servants were listed in the report of the Committee, they were classified as 'ex-officio' members. Dr John Thynne, who replaced Mr John Major in the summer of 1986, explained the reason. 'If a Government official had been a "formal" member, then it would mean that the Government had committed itself to a particular programme.'[9] Mr Robert Morland agreed: 'We had to make careful that we didn't look like an Alvey 2 team and that we were sensitive to all the political considerations.'[10] It was necessary though to have civil servants on the Committee because, as Dr Thynne insisted, Ministers would never back a proposal if it was created entirely by people outside Government.

---

[6] Interview, Sir Austin Bide.
[7] 'Information Technology -- A Plan for Concerted Action', Report of the IT86 Committee (London: HMSO, 1986).
[8] *Ibid.* Interviews, Mr Robert Morland; and Sir Austin Bide.
[9] Interview, Dr John Thynne, 15 October 1992.
[10] Interview, Mr Robert Morland.

Although the number of civil servants involved in creating Alvey 2 was disguised in the report, they were very active. They took the Committee's ideas to Ministers, registered Ministers' reactions and reported back to the Committee recommending ways to satisfy Ministerial concerns. They also had the important task of drafting the Committee's final report. As Dr Thynne attested, 'I would be overly modest to say that I did not play a very influential role in the Committee'.[11] The Report tried to make it appear otherwise, but this was clearly a DTI effort in which the interests of the Alvey Directorate were very well represented.

It is not surprising, therefore, that the conclusions the Committee would reach had been established by civil servants before it began deliberating. As Sir Austin concluded, 'it was clear that people had talked themselves into a format for the next go round. The Committee had been established to solve problems, but they had already decided what they were going to do'.[12] *As Bureaucratic Politics would predict, they were going to recommend a national programme of significant size to be implemented by some of the civil servants on the Committee.* In this way, the future budgets and responsibilities of the civil servants on the Committee would be guaranteed.

8.4 Back in Europe

While the IT86 Committee deliberated, negotiations over Esprit II and the Framework Programme took place. The negotiations Mr Pattie inherited on 1 July 1986, when Britain took over Presidency of the Council and Mr Pattie became chairman of the Council of Research Ministers, were deadlocked. The British, German and French Governments had vetoed the Commission's earlier proposal for a trebling of the Framework budget. The Commission tried to break the deadlock by cutting its proposal down to ECU 8.89 billion and then down further to ECU 7.7 billion. In line with the Framework cuts, the proposed five year budget for Esprit II was to ECU 2 billion, or approximately £1.3 billion.[13] An agreement had not been reached by November.

8.5 IT86 Committee Reports

In November, while the Framework negotiations were stalled, the IT86 Committee published its report. Despite the DTI's shrinking R&D budget and the growing

---

[11] Interview, Dr John Thynne, 15 October 1992.
[12] Interview, Sir Austin Bide.
[13] *Computing*, 31 July 1986, p. 2.

importance of Community R&D, the IT86 Committee called for a very ambitious, five year programme worth one billion pounds. The programme was founded on an Applications Scheme, which would exploit IT research and stimulate the development of new products and services, that was supported by a Basic Research Scheme.[14] The Research Scheme would focus on human interface, software, IKBS, systems architecture, speech, signal and image processing, and hardware.

In terms of finance, £425 million would come from the public purse. The Applications Scheme would require £125 million from the Government which, when combined with contributions from industry, would generate an Applications Scheme worth £500 million or more. The Research Scheme would cost £550 million, of which £300 million would come from the Government. The Government's contribution would come from the budgets of the DTI and SERC. (The MoD had decided not to fund more industrially relevant research, but to focus their funds on defence research.[15])

The Committee recommended an implementation structure virtually identical to the Alvey Directorate. Strategic decision-making would reside with an Executive Board chaired by a senior industrialist. Members of the Board would be drawn from the IT community. Assisting the Executive Board would be an Executive Group. Like the Alvey Directorate, the Group would have a 'separately identified budget within the DTI' and it would have its 'own identity and leader' who would be drawn from industry.[16] Members of the Executive Group would be seconded from industry and civil servants from the SERC and DTI. The IT86 Committee suggested that some members of the Alvey Directorate should become members of the Executive Group to ensure continuity. *Bureaucratic Politics would predict just that: bureaucrats calling for a programme with a large budget would position themselves to be in control of that budget.*

All project proposals would be submitted to the Executive Board, but the Board would delegate much of the decision-making and administration to the Executive Group, particularly as regards the allocation of funds.[17] As with the Alvey Programme, the SERC and DTI funds would be pooled and allocated by a third organization. As Sir Austin saw it, 'This was a pretty dubious runner. There was not a great deal of realism in this because people don't give up their procedures and rights that easily'.[18] Alvey had shown how unwilling Whitehall departments are to relinquish

---

[14] The following convention will be used to prevent confusion over the term 'applications'. 'Applications', with a capital 'A' is used to denote a particular category of research -- one that has market relevance. It is in contrast to 'basic' or 'pre-competitive' research, which has no specific use envisioned. The term 'application', with a lower case 'a' denotes a bid or a petition for funding.

[15] Interview, Mr Alastair Macdonald, 28 October 1992.

[16] 'Information Technology', *op. cit.*, in note 7, p. 54.

[17] *Ibid.*, p. 55.

[18] Interview, Sir Austin Bide.

decision-making authority when they release their money to another organization. It was appealing, however, to civil servants given implementation responsibility.

The Committee's recommendation for a large national programme was threatened by the Commission's proposal for a large second phase of Esprit. As Sir Austin commented, 'They were hung to begin with. They had sold themselves on a programme, but Esprit could be seen as almost a competitor to whatever we were going to propose. Esprit was an alternative method of dealing with the same type of problem that Alvey was dealing with'.[19] Given planned cuts in the DTI's budget for R&D, Ministers would certainly consider allowing Esprit to do all the work.

The Committee was not blind to the problem. They tried to solve it by justifying their national programme in terms of European ones. The Committee argued that a national programme was needed in order for the UK to use European programmes to its 'best advantage'.

> We should stress, however, that in each area where European collaboration is considered the most effective way forward, a careful analysis should be made of the UK-based support which may be necessary for the UK to sell itself as an effective and desirable partner to European collaborators. This is a key reason for continuation of a UK research programme. Without this support the UK may be unable to secure a fair return from programmes like Esprit.[20]

The national programme was to be 'complementary' to Esprit. Having learned from Alvey's failure to prevent duplication, the Committee attempted to theorize such 'complementarity'. The national programme would identify areas of research needed to improve UK competitiveness. Some of that research could be carried out in Europe, but most of it should be conducted through the national programme. Basic research should be undertaken in Europe where: the costs and skills require combination of resources; European partners can provide technical skills unavailable in the UK; and if the project involved standards.[21] Concerning the Applications Scheme, the Committee envisioned a two stage process. Projects would be worked up in the UK and then moved to the European level where collaboration would generate market opportunities in Europe for UK firms.[22]

In what would prove to be one of the Committee's most controversial proposals, it recommended that the UK's £135 million contribution to Esprit should come from the budget of this new programme and that Esprit should be implemented by the Executive Group. This would 'stimulate a proper awareness of the European

---

[19] Interview, Sir Austin Bide.
[20] 'Information Technology', *op. cit.*, in note 7, p. 43.
[21] 'Information Technology', *op. cit.*, in note 7, p. 43.
[22] 'Information Technology', *op. cit.*, in note 7, p. 44.

possibilities and second, to provide any necessary support (such as help in finding European partners or mediation with the Commission) for project proposals which contribute to the overall objective of enhancing UK international competitiveness'.[23] *In truth, it would enlarge the budgets and responsibilities of the civil servants implementing Alvey 2 and allow them to protect their programme from Esprit.* The Committee justified their budgetary requirements in the following terms. The resources of the Group needed to be larger than those of the Alvey Directorate in order to move Esprit in a direction consistent with British interests. The report recommended that 'in future such support and involvement [in Esprit] should be even stronger and should be adequately resourced, so that applications involving UK collaborators receive full and favourable consideration in the evaluation process.'[24]

Although the Committee attempted to mesh their national programme with Esprit, it was a half-hearted effort undertaken with the primary purpose of making a national programme, which benefited civil servants among others, politically acceptable.[25] Consider the two contradictory passages that appeared in the Committee's report.

> In putting forward our recommendations for a Plan of Action, we attach considerable importance to encouraging participation in current or planned European programmes such as Esprit, EUREKA and RACE. In many cases, work will be identified which can and should be carried out in collaboration with European partners. In particular, the Research Effort which we propose is based on the assumption that a significant proportion of the projects will be carried out as part of the second phase of the Esprit programme.[26]

> UK organisations should be given every support in their applications to Esprit where a particular project meets the objectives of the UK Plan of Action, but programme management should occasionally seek to discourage projects from being carried out in Esprit, for example, where wasteful duplication of UK work is identified.[27]

The IT86 Committee was determined to see a national programme, but it was forced, in its own self-interest, to cater to European R&D activities.

The IT86 Committee's national programme was clearly designed to maximize bureaucrat's budgets and responsibilities. The question remains, however, why civil servants on the IT86 Committee allowed a proposal calling for a large national

---

[23] 'Information Technology', *op. cit.*, in note 7, p. 44.
[24] 'Information Technology', *op. cit.*, in note 7, p. 44.
[25] Interviews, Mr Brian Oakley, 25 February 1992; Sir Austin Bide; and Mr Robert Morland.
[26] 'Information Technology', *op. cit.*, in note 7, p. 22.
[27] 'Information Technology', *op. cit.*, in note 7, p. 44.

programme to go forward when Ministers were in the process of slashing the department's R&D budget and when Community's R&D activities were on the increase. This thesis' reformulation of Bureaucratic Politics provides an answer. *In the face of conflicting Ministerial objectives and in the absence of Ministerial control, civil servants acted to further their immediate occupational interests.*

Mrs Thatcher and her Ministers in the DTI faced a dilemma they failed to resolve. They wished to stall the Commission's relentless drive forward on the R&D front. There was little, aside from delaying the process, they could do to stop the Commission. At the same time, they were committed to 'rolling back the frontiers of the state' and cut the DTI's budget for national R&D programmes. The two objectives were at odds with one another. They could not cut national R&D funds without strengthening the power of the Commission. Rather than accepting the reality and inevitability of the situation and developing a strategy for organizing and empowering Whitehall to take full advantage of European R&D, they compounded the dilemma by becoming increasingly intractable in European negotiations and holding the Framework Programme and Esprit II to ransom.

Not only did Ministers fail to formulate a coherent policy to cope with the reality of the situation, they did not scrutinize or control the activities of civil servants on the IT86 Committee. Mr Pattie was embroiled in the Framework negotiations and although he received briefings on the Committee's progress, he paid very little attention to their progress. Mr Pattie reported that he simply did not have the time or the energy to supervise the IT86 Committee.[28] He left them to go it alone.

In the face of unresolved policy conflicts and lacking Ministerial control, civil servants acted to further their own occupational interests by designing a programme that would provide them with budgets and responsibilities. Their programme was against the Conservative's commitment to reduce Government involvement in industry and it ignored the inevitable eclipse of national R&D by European R&D, but it did further the occupational interests of the civil servants involved in its design.

Mr Pattie received the report, calling it 'impressive and constructive'.[29] He promised to pursue the report with urgency and suggested that work could begin by Easter.[30] He shelved the report, however, pending the outcome of the Esprit II and Framework Programme negotiations, which remained deadlocked.

---

[28] Interview, Mr Geoffrey Pattie, 26 November 1992.

[29] *Computer Weekly*, 27 November 1986, p. 1.

[30] *Financial Times*, 22 November 1986, p. 1; and *Computer Weekly*, 27 November 1986, p. 1.

8.6 Back to European Negotiations

While the IT86 report sat on Mr Pattie's desk, he returned to the Framework negotiations with a very difficult position to argue. The Prime Minister and Treasury wished to see an ECU 3.1 billion Framework but would allow no more than ECU 3.5 billion.[31] The Dutch, French and Germans also wanted a much reduced budget, but the British position was the most extreme. In December, Mr Delors threatened to withdraw the Framework proposal and let all programmes under it terminate if member states continued to press for funding less than ECU 4 billion.

The Commission finally made a counter-offer: an ECU 3.7 billion Framework Programme to run for three years instead of five.[32] Research Ministers agreed to consider the proposal and meet again on 22 December. Mr Pattie cancelled the 22 December meeting, arguing that agreement was unlikely, despite the fact that a majority of member states wanted the meeting to go ahead.[33] Many observers judged Mr Pattie's handling of the Presidency of the Council of Research Ministers as a dismal failure. If, as Helen Wallace suggests, the Presidency of the Council 'constitute[s] a rigorous test of a Government's capacity to demonstrate efficiency and procedural dexterity',[34] then Britain was the loser in the field of R&D.

In February 1987, the Belgians, who were now holding the Presidency of the Council, tabled yet another compromise. They proposed a five year Framework Programme worth ECU 5.396 billion, which when added to the ECU 1.084 billion being spent on programmes already agreed gave a total of ECU 6.48 billion (approximately £4.8 billion). The Belgians insisted that this was the 'final compromise' and that member states had to agree it before 3 April or no further Research Council meetings would be arranged.[35] The British, French and Germans immediately rejected the Belgian compromise.[36]

By March, the French and Germans had been won around to the Belgian compromise. Mr Pattie remained intransigent. Mrs Thatcher allowed him no room to negotiate. She had relaxed her budget demands, allowing him to accept a Framework worth ECU 4 - 4.2 billion, but 'He was not given one ECU's worth of freedom to negotiate from this point. He must have felt like a messenger boy. I had seen the note from Number 10 giving him his orders. And he was ridiculed. Commissioners called

---

[31] *Infomatics Daily Bulletin*, 11 December 1986; *Agence Europe*, 19 February 1987.
[32] *Infomatics Daily Bulletin*, 11 December 1986.
[33] *Agence Europe*, 11 December 1986.
[34] Hellen Wallace, 'The British Presidency of the European Community's Council of Ministers: the Opportunity to Persuade', *International Affairs* (Vol. 62, No. 4, Autumn 1986), p. 583.
[35] *Agence Europe*, 26 March 1987; and *Computing*, 2 April 1987, p. 4.
[36] *Agence Europe*, 25 February 1987.

him incompetent'.[37] Speaking at a conference in Cheshire, Mr Cadiou said, 'The UK is one of the countries which has benefited most from Esprit. It defies logic as to why it should be the country that is blocking the programme'.[38] Mr Pattie fired back, calling the Community's R&D a 'shambles'.[39]

The Belgian's 3 April deadline passed without an agreement. The European Parliament then voted to have the Commission withdraw its proposal if the UK did not approve it within three weeks.[40] It was obvious that Britain would not comply. Mrs Thatcher had just called a General Election for June and all Ministers' were mobilized for a campaign blitz.

8.7 Progress on the IT86 Report

By April, the DTI had finalized its response to the IT86 report. According to Dr John Thynne and Mr Alastair Macdonald, who were drafting the Government's response and had both been members of the IT86 Committee, Mr Pattie had approved the Applications Scheme at the requested funding level and reduced funding for the Research Scheme.[41] All that remained was for Mr Pattie to get the Prime Minister's approval. Mr Pattie decided to approach the Prime Minister after the General Election, surmising that his influence would be greater then. Rumour had it that he would replace Mr Paul Channon as Secretary of State at the DTI.[42]

The Conservatives were returned to office in June 1987, but Mr Pattie was sacked. Lord David Young was appointed Secretary of State at the DTI. Lord Young was a businessman philosophically committed to 'rolling back the frontiers of the state'. He had a pro-European attitude and a desire to change the course of the DTI, making it the 'Department for Europe' and getting it off the backs of industry. Mr Kenneth Clarke was made Chancellor of the Duchy of Lancaster and Minister of State for Trade and Industry with responsibility for computing, microelectronics and telecommunications. The post of Minister of State for Information Technology was abolished.

---

[37] Interviews, Dr John Thynne, 2 December 1992; and Mr Brian Oakley, 2 June 1992.
[38] *Computing*, 21 May 1987, p. 3.
[39] *Times*, 31 March 1987, p. 24.
[40] *Electronics Weekly*, 8 April 1987, p. 1; *Financial Times*, 4 April 1987, p. 2; *Times*, 4 April 1987, p. 6.
[41] Interviews, Dr John Thynne, 2 December 1992 and 15 October 1992; and Mr Alastair Macdonald, 28 October 1992.
[42] Interview, Mr Geoffrey Pattie, 26 November 1992.

8.8 The New Team and Outlines of a New R&D Policy

The new Ministers inherited the IT86 report and the intractable Esprit II and Framework Programme negotiations. The programme proposed by the IT86 Committee was antithetical to Lord Young's commitment to get government off the backs of industry and reorientate the DTI toward Europe. Consequently, he and Mr Clarke 'stonewalled' the report.[43] Observers expected the Government's response to the IT86 report (which was now called 'IT92' because the Government had delayed so long) to be announced at the July 1987 Alvey conference. At the conference, Mr Clarke confirmed that 'the Government are in principle quite prepared to accept that there is a case for continuing to fund collaborative programmes in some way', but 'What we have to do now is to examine critically the justification for further Government funding at a time when there are huge demands for the tax-payer's money'.[44]

Mr Clarke and Lord Young's refusal to rule on the IT86 Report served two purposes. First, it was a tentative step to establish their control over IT R&D issues in the Department. They would not allow civil servants to pressure them into approving a programme simply because a previous Minister, Mr Pattie, had been sympathetic to it. Second, it was a clear indication that the Ministers intended to reorientate their department's R&D policy.[45]

Meanwhile, the Framework Programme negotiations dragged on. Senior figures within the Commission were so frustrated with the pace of the negotiations that several of them, including its president Mr Delors, threatened to resign if an agreement was not reached by the end of the year.[46] Observers in Britain hoped that the new Ministers would bring a new approach. The *Financial Times* reported that neither Lord Young nor Mr Clarke was opposed to the Framework Programme and that any log-jam that remained would be the doing of the Treasury.[47] Mr Pattie was blamed for the Government's earlier failure to find a solution.

In early July, Mr Clarke proposed a face saving device that would cut a mere ECU 417 million off the Belgian's offer.[48] Agreement was finally reached on 14 July 1987 for a Framework Programme budget of ECU 5.2 billion and the unofficial go-ahead for Esprit II was given.

---

[43] Brian Oakley and Kenneth Owen, *Alvey: Britain's Strategic Computing Initiative* (London: Massachusetts Institute of Technology Press, 1989), p. 241.
[44] *Ibid.*, p. 242; *Electronics Times*, 23 July 1987, p. 8.
[45] Interview, Dr John Thynne, 2 December 1992.
[46] *Financial Times*, 18 June 1987, p. 3; and *Guardian*, 18 June 1987, p. 1 and p. 36.
[47] *Financial Times*, 24 June 1987, p. 2, 25 June 1987, p. 3 and 26 June 1987, p. 7.
[48] *Engineer*, 9 July 1987, p. 6.

Many Esprit research teams had been disbanded or left idle for lack of funds as a result of the one year delay in the start of the Framework Programme.[49] Dr Thynne assessed Britain's achievements in the negotiations: 'We died in the ditches over it. We lost all credibility. If we had agreed to the figure of 6, we would not be seen as begrudging Europeans, but as constructive members undertaking the worthwhile task of disciplining the budget. As it was, no one got credit for going to 5.2.'[50]

After the Framework budget was agreed, the Commission submitted its formal proposal for Esprit II as well as its draft work programme for Esprit II.[51] The original proposal calling for a budget of ECU 2.2 billion had been reduced to ECU 1.6 billion. Esprit II was formally approved in April 1988, after a nine month delay, at a level of ECU 1.6 billion (approximately £1,056 million).Esprit II represented a major shift from Esprit I. Esprit II would be more industrially oriented with concentration on Applications research in three general areas: microelectronics, information processing systems and IT Application technologies. Like the IT86 Committee's proposed programme, the Esprit Applications orientation would be supplemented by a Basic Research programme designed primarily for academics.

Lord Young's decision to stonewall on the IT86 report and approve Esprit II was indicative of his desire to formalize the shift in DTI R&D policy that had been surreptitiously introduced under Mr Channon's tenure. In Lord Young's DTI, Europe would be at the centre of British R&D policy. Although his intentions were clear, Lord Young did not formalize or clearly articulate them. Only the barest outlines were discernible. Further, although he had taken his first steps toward establishing control over departmental R&D policy, his grip was loose during his first six months in office. Finally, Lord Young did not, during this six month period, make organizational changes that would cure the inefficiencies of departmental control and coordination mechanisms. He was beginning to exert control and formulate new objectives, but the conditions of uncertainty and organizational inefficiency conducive to bureaucratic competition remained. How did civil servants respond?

---

[49] *Financial Times*, 15 July 1987, p. 42 and 23 July 1987, p. 2, p. 8 and p. 22; *Times*, 23 July 1987, p. 4 and p. 7.

[50] Interview, Dr John Thynne, 2 December 1992.

[51] Commission of the European Communities, 'Proposal for a Council Regulation Concerning the European Strategic Programme for Research and Development in Information Technologies (ESPRIT)', Com (87) 313 final (Brussels: Commission of the European Communities, July 1987). Commission of the European Communities, 'Draft ESPRIT Workprogramme', 22 July 1987.

8.9 Responses to New Policy Outlines

As time passed with no Ministerial decision on Alvey 2, the prospects for it, and the budgets and implementation responsibilities for civil servants that were tied up in it, looked unlikely to be realized. In contrast, Lord Young's approval of Esprit converted it into a guaranteed source of budgets and responsibilities. Some civil servants recognized their Minister's actions as the harbinger of a new policy toward European R&D that would have strong ramifications for their occupational interests. *As Bureaucratic Politics would predict, civil servants who saw Europe as a means to budgets and responsibilities maneuvered to establish a presence in Esprit.* That maneuvering was significantly different than that observed during earlier periods, however. *Rather than operating independently of Ministerial direction, their actions were now compatible with Lord Young's emerging policy reorientation, which gave increasing priority to European R&D programmes over national ones.*

Civil servants in the DTI's Research Technology Policy Division (RTP) instigated organizational changes and strategy reorientations that increased their influence over Community R&D. They did so by arguing for a coherent, constructive and positive departmental policy toward European R&D and by giving themselves responsibility for its formulation. In this manner, their desire for increased responsibilities was made consistent with the broad outlines of Lord Young's policy reorientation.

According to Dr Alastair Keddie of RTP division,

> We realized that we needed to set up a framework for dealing with Europe and that we needed to get our act together to operate more effectively. We had to increase our dialogue with our opposites in other countries and increase our dialogue with our opposites within the Department [DTI] and across departments. We had to adopt a more constructive, forward thinking approach.[52]

The first step in generating a constructive, coherent approach to European R&D was to improve the attitude of civil servants in the DTI toward European R&D. Given Lord Young's pro-European attitude, RTP was concerned that many civil servants in the DTI were far too dismissive of European programmes and that they had not fully realized the growing significance of Community initiatives. Thus, RTP made it their 'policy to get the DTI to recognize that the European scene was changing rapidly'.[53] RTP division created a list of areas that should be financed through

[52] Interview, Dr Alastair Keddie.
[53] Interview, Dr Alastair Keddie.

Community funds and a list of those that should be funded nationally. Information technology and telecommunications topped the list of areas appropriate for EC funding. RTP also turned its attention to finances. Having concluded that little, if any, effort to calculate the appropriate size of Community R&D spend had been undertaken by the Treasury or Number 10 during the Framework negotiations, RTP decided to conduct a thorough analysis of all EC R&D programmes and suggest the optimal size and sensible growth rates.[54]

The DTI needed a strong organization capable of bringing the disparate interests of the numerous divisions with R&D responsibilities together into a single, coherent policy. RTP was just the organization. 'We had to put structures into place which would integrate interests across divisions in the Department.'[55] Numerous task forces and working groups, bringing together civil servants from across the DTI, were created. RTP was at the centre of this network: 'We also had to get it realized in the department that there was a single group of people who were representing the UK interest rather than everyone representing their own interests. It was a very carrot and stick approach.'[56]

RTP concluded that better coordination and consultation was needed across Whitehall and with the European Commission.[57] Officials from RTP initiated frequent meetings with their counterparts in the Cabinet Office. Dr Keddie stated that during this period, he had daily contact with the Cabinet Office. Officials from RTP also instigated regular bilateral talks with their counterparts in France and Germany and they warmed up relations with Commissioners from DGXII (Research) and DGXIII (Information Technology and Telecommunications).[58]

Maneuvering for influence over and responsibility for European R&D was not limited to RTP division. It extended across the IT and LA divisions and the Alvey Directorate as well and it involved significant organizational restructuring. As with the activities of RTP division, *this maneuvering was conducted within parameters set by Lord Young's emerging orientation toward European R&D.*

On 10 October 1987, Mr Oakley retired from the civil service and left the Alvey Directorate in the hands of his Deputy, Mr Laurence Clarke. Mr Clarke understood his assignment to be temporary, pending the Government's decision on the IT86 report.[59] The IT86 report had recommended that their programme be implemented by an Executive Group, led by an industrialist. Mr Macdonald, who had

---

[54] Interviews, Mr Adrian Grilli, 25 January, 1993; and Mr John Barber.
[55] Interview, Dr Alastair Keddie.
[56] Interview, Dr Alastair Keddie.
[57] Interview, Mr Adrian Grilli, 25 January 1993.
[58] Interview, Mr David Wiseman.
[59] Oakley and Owen, *op. cit.*, in note 43, p. 253.

been promoted to Deputy Secretary in charge of IT and LA divisions, informed Mr Clarke that if the Government accepted the IT86 proposals and an Executive Group was created, Mr Clarke would be one among many applicants considered for the post of director.[60]

Mr Clarke thought that he was secure in his job at least until Ministers ruled on the IT86 report. The unexpected then happened. Mr Clarke received a call on 6 November from Mr Macdonald informing him that a civil servant would immediately replace him as head of the Alvey Directorate and that a civil servant would head the Executive Group, if it was created.[61] Mr Clarke was incensed and wrote a letter to the Permanent Secretary, Sir Brian Hayes, expressing his dissatisfaction. Sir Brian agreed to meet with Mr Clarke and at their 16 November meeting, Mr Hayes informed him that Dr Timothy Walker had been chosen to lead the Alvey Directorate and any subsequent organization.[62] (Dr Walker had been Alvey's first Director of Administration, but had moved to the Policy Planning Unit to become Mr Paul Channon and then Lord Young's principal private secretary.) The SERC was not consulted. They were told of the decision on 18 November, only five days before Dr Walker took over from Mr Clarke. Needless to say, the SERC were 'very, very angry'.[63] Why was this decision made and why was it made with so little respect for the formalities of consultation? The explanation lies in the maneuvering of civil servants in the DTI.

Turn the clock back to 1986. In late 1986, Mr John Major announced his decision to retire from the civil service. Mr Macdonald, who had just been promoted to Deputy Secretary in charge of IT and LA divisions, needed to find a replacement. He rang his good friend, Dr John Thynne who was heading up the DTI's regional office in the Northwest, and asked him to return to London and take over LA division. Dr Thynne agreed.[64]

After a short time in LA division, Dr Thynne concluded that the allocation of IT responsibilities across the DTI was senseless. Three organizations had responsibility for information technology: IT division, which was now led by Dr WB Willott of Under Secretary rank; LA division, which was led by Dr Thynne, also of Under Secretary rank; and the Alvey Directorate, which was led by Mr Oakley, a Deputy Secretary. Dr Thynne told Mr Macdonald of his concerns and Mr Macdonald recommended that Dr Thynne come up with a plan to reorganize the department.

---

[60] Oakley and Owen, *op. cit.*, in note 43, p. 253.
[61] Oakley and Owen, *op. cit.*, in note 43, p. 253.
[62] Oakley and Owen, *op. cit.*, in note 43, p. 254.
[63] Interview, Dr David Worsnip.
[64] Interview, Dr John Thynne, 2 December 1992.

After consulting with Mr Oakley, Dr Thynne recommended the following reorganization. LA division would be disbanded and its responsibility for all research in silicon, gallium arsenide and optoelectronics be transferred to the Alvey Directorate, or whatever its successor organization was to be called. The Alvey Directorate would also have responsibility for any programme that resulted from the IT86 report. Responsibility for Esprit would revert to the IT division along with the Alvey Directorate's limited activities in software research. IT division would retain its responsibilities for issues such as consumer electronics, radio, television, video and computer services.

This recommendation was significant because it 'normalized' the Alvey Directorate. The Alvey Directorate was given responsibilities that were not associated with the Alvey Programme. Therefore, it was no longer a transitory organization with a life-time limited to the Programme it was created to implement. As Dr Alastair Keddie of RTP division saw it, 'the Alvey Directorate became just one of the many divisions. What was Alvey became part of the input of the entire department'.[65]

Mr Oakley, Dr Thynne and Mr Macdonald believed it necessary to normalize the Directorate for one major reason: it was the only way to take full advantage of Esprit. They predicted that if Ministers were to approve any part of the IT86 recommendations, it would be a scaled down version of the Applications Scheme. The Basic Research Scheme would be rejected or funded at an insignificant level.[66] Esprit would thus be the only significant source of funding for basic research in the UK. It was therefore necessary to ensure effective implementation. The IT86 report had recommended that the Executive Group, the Alvey Directorate look-alike, implement Esprit. This was impossible. By this time, the backlash against the Alvey Directorate had become too strong to ignore. Even outside observers had realized the scale of resentment.

> A laudable recommendation of the plan [IT86 report] is its suggestion that a single, high powered organisation be set up within the DTI to oversee and manage the proposed programmes' activities. This will not please the bureaucrats at the other ministries involved....[67]

> For Whitehall, Alvey has been a traumatic experience. The Government's old ways of supporting research are less strenuous than this co-operative venture, and it has shown no readiness to repeat elsewhere the formula of multi-

---

[65] Interview, Dr Alastair Keddie.

[66] Mr Macdonald and Dr Thynne were, at this time, drafting Mr Pattie's response to the IT86 report and were well aware of his intentions. They kept Mr Oakley informed. Interviews, Dr John Thynne, 2 December 1992; and Mr Brian Oakley, 2 June 1992.

[67] *Electronics Times*, 27 November 1986, p. 16.

> department funding for a major research initiative. Whitehall is expected to strenuously resist one Alvey view that 'We need an Alvey directorate, or something like it, in perpetuity'.[68]

From Mr Macdonald's point of view,

> Esprit was going to be the real driving force in future. It was a lower risk strategy to have a civil servant who knew Whitehall and Brussels than to put an industrialist in just to cheer industry up. We were going to have to get the most value out of Esprit and that needed a civil servant who could find his way through the system, create no disputes and squeeze as much out of the system as possible.[69]

Bringing the Alvey Directorate, and its successor, back into the DTI was the only satisfactory solution.

Mr Macdonald was now faced with staffing decisions. Mr Oakley had also announced his retirement and Dr Willott was moving to the Export Credits Guarantee Department. Civil servants were needed to run the reorganized IT division and Alvey Directorate (and its successor). There were two candidates: Dr Thynne and Dr Walker. Dr Thynne had reorganized himself out of a job and Dr Walker's tenure at the Secretary of State's office was over. Mr Macdonald asked Dr Thynne which organization he would prefer to lead and Dr Thynne requested the Alvey Directorate. Mr Macdonald agreed, but soon after realized that Dr Thynne might best be able to handle the managerial complexity of IT division so he asked if Dr Thynne would take IT division.[70] Dr Thynne agreed and became Under Secretary in IT division while Dr Walker was promoted to Under Secretary and took over from Mr Clarke in November 1987 as head of the Alvey Directorate. Dr Walker saw the reorganization in the following terms:

> In DTI there was always a tension between the Electronics Applications (LA) Division and the Alvey Directorate. I now have the former LA people in my directorate. The new structure has brought the two together and integrated them in such a way that they are now one team, rather than two teams competing.[71]

At this juncture, Dr Thynne had formal responsibility for Esprit although both he and Dr Walker attended EMC meetings. From Dr Walker's point of view, it was

---

[68] *Financial Times*, 12 August 1986, p. 10.
[69] Interview, Mr Alastair Macdonald, 28 October 1992.
[70] Interview, Dr John Thynne, 15 October 1992.
[71] Oakley and Owen, *op. cit.*, in note 43, p. 261.

vital that he obtain responsibility for Esprit. Having just returned from the office of the Secretary of State, Dr Walker suspected that Lord Young would approve only the Applications Scheme of the IT86 report and probably at a much lower level than the IT86 Committee recommended. If this came to pass, one of two things would occur: Dr Walker's organization would be given limited responsibilities and a painfully small budget; or the justification for his organization would disappear and the organization along with it. Dr Walker had to find a rationale for his organization and a budget. Esprit offered both. Mr Morland, Director of Alvey VLSI, explained Dr Walker's concern with Esprit: 'He was climbing his way up through the civil service ladder and he was looking for a way to move through the organization [DTI]. He was not going to stick his neck out for IT in the UK. Supporting the UK IT industry was not the way to the top.'[72] Esprit was.

Dr Walker entered into Esprit negotiations with great enthusiasm. Dr Thynne, on the other hand, judged that Japanese IT would be of increasing importance to British industry and he turned his attention to the Far East and away from Europe. It was in both men s' interest to allow Dr Walker to be the UK's representative to the EMC, leaving Dr Thynne free to pursue his interests in Japan. As Dr Thynne remarked:

> I agreed with Tim that we would both be on the EMC, but he would go and I wouldn't. There was no point in two Under Secretaries going. I was very busy and I was looking at Japan by this point. Tim was an able operator and we were very friendly. We shared confidence, we were open and we were friends.[73]

Mr Macdonald agreed to the arrangement and formal responsibility for Esprit was transferred from IT division to Dr Walker's Alvey Directorate. As Mr Macdonald saw it, 'Tim Walker had been Brian Oakley's deputy and he had Esprit experience. He had also been the private principle to Lord Young and that definitely had political advantage. He was someone who knew Ministers and Ministers would be much more inclined to listen to someone they knew'.[74] The autonomy of the Alvey Directorate was abolished. Dr Walker and his Directorate were moved from Millbank Tower to the DTI's offices in Victoria.

Having gained responsibility for Esprit, Dr Walker attempted to secure larger budgets and responsibilities by increasing the appeal of a national Applications programme to run simultaneously with Esprit. The problem was, however, that Esprit II was Applications oriented. Why should Ministers, who were trying to reduce the

---

[72] Inverview, Mr Robert Morland.
[73] Interview, Dr John Thynne, 15 October 1992.
[74] Interview, Mr Alastair Macdonald, 28 October 1992.

Department's R&D spend, approve a programme that would fund research that would qualify for European funds? The IT86 Committee had attempted to solve the problem by arguing that a national programme was necessary for Britain to get the most out of European programmes. Dr Walker recognized this for what it was: a Committee's instinctive and desperate attempt to discredit that which would threaten their own recommendations. Having just returned from the Secretary of State's office, Dr Walker knew the futility of the exercise. A stronger, more analytical, approach was needed.

If Dr Walker could assure his Ministers that a national Applications programme could fund research not being undertaken in Esprit, hence negating the prospects of duplication, then the chances of his organization being rewarded with increased budgets and wide-ranging responsibilities would be greater. In this vein, Dr Walker invited members of the Directorate and IT specialists to design elements of a national Applications programme that was inextricably linked, but different from, Esprit II. The experts designed strategies for three technical areas: devices, systems architecture and systems engineering.

Mr Morland and Mr John Bass of Plessey's Caswell research centre designed the devices strategy.[75] They visited Brussels to discover what work the Commission planned to fund through Esprit II. Commissioners were reluctant to discuss their plans in any detail, so Mr Morland and Mr Bass visited most British companies involved in Esprit work and gathered details about their Esprit projects. From this information, they were able to sketch an accurate outline of the Commission's strategy. They then identified gaps in the Esprit strategy and fill in those gaps with a national programme. A similar approach was taken in the areas of systems architecture and systems engineering.[76]

An important element of Dr Walker's scheme was the participation of the SERC. Dr Walker knew that the budget he might be allocated was likely to be painfully small. In order to run an Applications programme of any significance, he needed another source of money. The MoD was no longer interested in industrial research, but the SERC wanted to keep a presence in IT R&D.[77] Dr Walker held talks with civil servants from the SERC on possible frameworks for future collaboration.

While Minister's deliberated on the IT86 report, some civil servants surmised the general outlines of their Department's future R&D policy: European R&D would

---

[75] Interview, Mr Robert Morland.

[76] The strategies were eventually published in 1988. They were: Information Engineering Directorate, 'Silicon 2000. Devices: A National Research Programme in Silicon VLSI and CAD' (DTI: June 1988); Information Engineering Directorate, 'Systems Architecture. A Strategy for Research in Parallel Architecture, Distributed Systems, Vision and Speech Technologies' (DTI: June 1988); and Information Engineering Directorate, 'Systems Engineering. Improved Design and Construction of Complex IT Systems (DTI: June 1988).

[77] Interviews, Dr David Worsnip; and Dr David Thomas.

move centre stage and national R&D would be of minimal importance. *Future budgets and responsibilities would emanate primarily from Europe. Consequently, they worked to bring Esprit into their individual remits. Thus, bureaucratic competition for budgets and responsibilities existed, but it was conducted within parameters set by Lord Young.* Those parameters stipulated that European R&D programmes would be given increasing priority over national programme. Civil servants now had to await the fate of IT86.

8.10 Elsewhere in Whitehall

Civil servants in the DTI were not the only ones to realize the growing importance of European R&D and work to establish a foothold there. Civil servants in the Treasury and Cabinet Office did the same.

Under the strong guidance of Mr Nigel Lawson, the Treasury extended its presence in Community R&D by formalizing its 'attribution' formula and preparing departments for its application in the 1988 Public Expenditure round. The finalized attribution formula worked in the following manner.[78] In discussion with the Cabinet Office and with departments, the Treasury would assign a 'lead' department for each area of Community R&D spend. The DTI was assigned the lead department for all Community spending on information technology, including Esprit. The Government's contribution to the Community's R&D budget would come from, or be 'attributed' to, the budget of the respective lead department. This amount of the yearly 'attribution' would be settled during the yearly Public Expenditure Survey (PES), during which the annual budget for each department is negotiated.[79]

The departmental budget, as negotiated during the PES round, includes two elements: money that may be spent on national programmes implemented by the department; and the Government's contribution to the Community R&D budget. If Community spending on R&D exceeds 1984 levels, which it has every year since,

---

[78] Sources for this discussion include the following interviews: Mr Michael Corcoran and personal correspondence 26 January 1993; Mr Adrian Grilli, 11 February 1993; Dr Alastair Keddie; Ms Christine Symes; Mr Derek Flynne, 9 December 1992; Mr Alan Mayo, 20 January 1992. Testimony of The Hon Douglas Hogg (MP and Minister for Trade and Enterprise, DTI) Mr Robert Foster (DTI), Mr PL Thomas (Cabinet Office), Mr PJ Colyear (Cabinet Office), House of Lords Select Committee on the European Communities, *A Community Framework for R&D*, 17th Report, Session 1989-90 (London: HMSO, 1990), pp. 12-22. Supplementary Explanatory Memorandum by the Department of Trade and Industry/Cabinet Office, *ibid.*, pp. 78-81. Testimony of Mr D Revolta (Treasury), Mr C Farthing (Treasury) and Mr M Mercer (Treasury), House of Lords Select Committee on Science and Technology, *International Scientific Programmes*, Second Report, Session 1990-1991, HL Paper 24-II (London: HMSO, February 1991), pp. 1-13.

[79] The amount of the attribution is negotiated during a round of negotiations called Euro-PES (European Public Expenditure Survey). Euro-PES simply refers to that element of the Public Expenditure Survey that relates to European Community spending.

money allocated to national programmes must be cut back to keep departmental spending within the budget agreed with the Treasury. Thus, any increase in Community spending above this predetermined level results in a proportional decrease in money that can be spent on national programmes implemented by the lead department. Money over the 1984 levels that the Commission spends on Esprit must be taken from the DTI's budget for its own national programmes. The Treasury then reduces the department's budget for national programmes (not the Department's total budget) at the beginning of the next year's PES round. Departments may then bid for a reinstatement of some or all of this reduction. Through this system, 'value for money' could be secured and the Treasury could control the British contribution to the Community budget.

While the Treasury was exerting its influence over Community R&D, the Cabinet Office attempted to do the same. Numerous organizational changes took place in the Cabinet Office, all which were designed to increase the Cabinet Office's influence over national and Community R&D.

The first change was the replacement of Sir Robin Nicholson with Mr John Fairclough as the Chief Scientific Advisor in the Cabinet Office. Mr Fairclough was determined to strengthen the Cabinet Office.[80] Throughout the decade, the Cabinet Office had been weak and incapable of exerting control or influence over departmental R&D spending. In the words of Sir John Kingman, the Cabinet Office science secretariat needed 'power'.[81]

Mr Fairclough made a number of changes to obtain such 'power'. He first increased the staff numbers in the Science and Technology Secretariat and expanded their responsibilities. The Science and Technology Secretariat was responsible for preparing the annual report on Government funded R&D. The first several reports were rather unprofessional and unambitious. Mr Fairclough insisted that their scope and quality improve. Although preparing the report was a time-consuming and tedious task for the Secretariat, it afforded them several privileges. It enabled them to establish close contact with civil servants responsible for departmental R&D decisions. It gave them valuable information about each department's priorities and procedures for making R&D decisions.

In early 1986, the Information Technology Advisory Panel (ITAP), which was created in 1982 to advise the Prime Minister, was dissolved. To fill the gap, the terms of reference for the Advisory Council for Applied Research and Development (ACARD) were expanded. The Chief Scientist was a member of ACARD and the

---

[80] Interview, Sir John Fairclough. *Financial Times*, 25 July 1987, p. 6.

[81] House of Lords Select Commitee on Science and Technology, *Civil Research and Development*, First Report, Session 1986-87, HL20-II (London: HMSO, 1987), p. 40.

Science and Technology Secretariat served as the secretariat for this strengthened organization. In this capacity, civil servants assisted members of ACARD prepare reports on issues of relevance to Government funding of R&D.[82] These papers were prepared for the Prime Minister and published with her consent. In this way, civil servants had a route through which they could present their ideas to the top levels of Government.[83]

Finally, Mr Fairclough convinced the Prime Minister to create a 'watchdog' body in the Cabinet Office called the Science and Technology Assessment Office (STAO). The STAO had 5 to 10 members, was a sub-unit of the Science and Technology Secretariat and reported to Mr Fairclough. The STAO's terms of reference were to: establish a central body that would analyze the contribution made by Government funded R&D to the efficiency and competitiveness of the economy; advise Ministers and civil servants on the shape, content and conduct of national R&D programmes; and advise on spending priorities.[84] The STAO was the embodiment of the concern with 'value for money'. As *The Times* put it, 'The powers in Whitehall, particularly the Cabinet Office [are] concerned that Britain is not getting value for money from the 4,000 million pounds a year pumped into computers, electronics and other high technology research'.[85] The Alvey Programme was on Mr Fairclough's hit-list. Although Mr Fairclough was a strong supporter of IT, having come from IBM, he believed the Alvey Programme, and any others like it, was an ineffective way of aiding industry. Its focus on pre-competitive research was a waste of Government money because it offered no 'value added' to the British economy.[86]

These reforms allowed the Science and Technology Secretariat to extend its authority into international R&D issues. Members of the Secretariat strengthened contacts with civil servants in Whitehall departments with responsibility for EC R&D. The Secretariat also began to strengthen consultation mechanisms for coordinating individual department's policies for EC R&D.[87] The Secretariat claimed ultimate responsibility for coordinating departmental interests in the Framework Programme. Members of the Secretariat also initiated meetings with European science Ministers and European Commissioners. In this manner, the Secretariat could gather its own information on Community R&D rather than relying on departments to choose the

---

[82] Testimony of Sir Francis Tombs (Chairman ACARD), *ibid.*, p. 436.
[83] Testimony of Mrs Catherine Cunningham (Cabinet Office, Head of ACARD Secretariat), *ibid.*, p. 441.
[84] Testimony of Sir John Fairclough, *ibid.*, p. 453.
[85] *Times*, 8 July 1986.
[86] Interview, Sir John Fairclough. *Financial Times*, 18 December 1986, p. 24; and *Times*, 12 December 1986.
[87] Interviews, Dr Alastair Keddie; Mr Alan Mayo, 20 January 1992; and Mr David Warren. Testimony of Sir John Fairclough, House of Lords, HL 20-I, *op. cit.*, in note 82, p. 459.

information they wised to pass on to the Cabinet Office. These were the first of many actions that strengthened the Cabinet Office Science and Technology Secretariat and eventually allowed it to gain a controlling interest in EC R&D.

8.11 Westminster's Assessment

In the wake of the Framework Programme and Esprit II negotiations, the House of Lords Select Committee on Science and Technology concluded that morale in the scientific community was at an all-time low and that the 'overall picture conveys an impression of turmoil and frustration'.[88] In their January 1987 report, the Lords called for a new approach to policy-making. Two of their recommendations were for a science Minister to be appointed to the Cabinet and replacement of ACARD with a Council of Science and Technology that was chaired by the Prime Minister.[89]

The Government's accepted some, but not all, of the recommendations. ACARD's name was changed to the Advisory Council on Science and Technology (ACOST). ACARD's remit was limited to R&D, but ACOST 's would include all science and technology issues. ACOST 's remit was: 'To advise Government on: the priorities for science and technology in the United Kingdom; the application of science and technology, developed in the United Kingdom and elsewhere, for the benefit of both the public and private sectors in accordance with national needs; the co-ordination, in collaboration with Departmental Advisory Bodies, of science and technology activities; the nature and extent of United Kingdom participation in international collaboration in science and technology.'[90] It was expected that ACOST would be a much more powerful body than ACARD. As the *Financial Times* wrote, 'Never before has British science and technology as a whole had a mechanism for deciding priorities'.[91] As the central advisory structure became more powerful and had easier access to the Prime Minister, so did the Chief Scientific Advisor, who was a member of ACOST, and the Science and Technology Secretariat which serviced it.

Although the Government's central advisory structure was changed, the Prime Minister was still personally in charge of the country's civil R&D. She exercised her leadership by creating and chairing a Cabinet committee, called E(ST), which was a sub-committee of the Cabinet Economic Committee.[92] This Committee was advised by

---

[88] House of Lords, HL 20-I, *op. cit.*, in note 82, pp. 11-12.
[89] House of Lords, HL 20-I, *op. cit.*, in note 82, pp. 64-66.
[90] *Civil Research and Development*, Government response to th First Report of the House of Lords Select Committee on Science and Technology, 1986-87 session, Cm 185 (London: HMSO, July 1987), p. 2.
[91] *Financial Times*, 2 September 1987, p. 29.
[92] Margaret Thatcher, *The Downing Street Years* (London: HarperCollins, 1993), p. 639; *Financial Times*, 21 July 1987, p. 1 and 9 April 1990, p. 32.

ACOST. Despite the changes, it was clear that the Prime Minister continued to resist change or admit that the Government's R&D policy-making machinery was failing. In the DTI, however, Ministers were working to bring coherence and order to Government policy-making as regards national and Community R&D. Similar actions were being taken in the Treasury and Cabinet Office.

8.12 Conclusion

Before Lord Young's appointment to the DTI, Ministerial objectives regarding European R&D were inconsistent. When Ministers cut the DTI's budget for national R&D programmes, civil servants responsible for IT R&D lost budgets and responsibilities previously afforded to them through national programmes. The only secure future source of budgets and responsibilities was through involvement in EC R&D programmes. At the same time that their budget cuts increased the significance of Europe, Ministers attempted to reduce the importance of European R&D by blocking the Framework Programme and Esprit II negotiations. In this environment of policy uncertainty, Ministers failed to control or closely supervise events taking place on the national IT R&D front. Civil servants on the IT86 Committee were given a free hand to design a national IT R&D programme. *Lacking clear Ministerial objectives and control, civil servants satisfied their own occupational interests.* They designed a national programme that afforded them a large budget and wide-ranging responsibilities. This is just as this thesis' formulation of the Bureaucratic Politics perspective would predict.

When Lord Young took office, he began to exert his authority and set the foundations of a new departmental policy toward Europe. He expected European R&D programmes to eclipse national ones. During this interim period, while Ministerial objectives were not formalized and while Ministerial control was not entirely established, *civil servants continued to work to maximize their budgets and responsibilities. However, as this thesis' reformulation of the perspective would expect, Lord Young's emerging objectives and incipient control did affect civil servants' behaviour. It set parameters for their bureaucratic maneuvering.* Civil servants attempted to maximize their budgets and responsibilities by exerting their influence in Esprit. As a result, Lord Young's objective of giving greater importance to European R&D was realized.

Civil servants no longer perceived EC programmes, particularly Esprit, as a threat to their budgets and responsibilities. Rather, EC programmes were a source of them. Further, the evidence in this Chapter suggests that bureaucrats now saw a direct

relationship between responsibility for EC programmes and promotions. Thus, Lord Young's objective of increasing the significance of EC R&D was realized.

Civil servants sought to bring EC R&D into their spheres of influence. Did action channels, as formulated in this thesis, provide insight into the means they employed to achieve this objective? *Action channels were not instrumental in examining the behaviour of civil servants during this period.* The reason: civil servants were working to break down the action channels that existed from 1983 through 1985 and build new ones that would further their Minister's objectives and further their own occupational interests. *Thus, action channels were the object rather than the determinant of bureaucratic action.*

Did bureaucratic competition affect British policy in Esprit during this period? No, because policy-making was monopolized by Mrs Thatcher, the Treasury and Ministers in the DTI. All decisions were taken by Ministers, with little if any, recourse to civil servants. Mr Pattie could not recall soliciting the advice of his civil servants during this period.[93] Those decisions were driven by the Prime Minister's desire to minimize the budget of the EC.

The Framework Programme and Esprit II negotiations were deadlocked for over a year, during which time most Esprit activity came to a halt. There were few EMC meetings to attend, there were no official workplans created, there were no project proposals to evaluate. All the avenues through which civil servants had previously exerted influence in Esprit were closed. Ministers had usurped their decision-making license. Thus, although the IT86 Committee's treatment of Esprit was conditioned by civil servants' desire for budgets and responsibilities and although civil servants competed over responsibility for Esprit during Lord Young's first six months in office, the Ministerial attention afforded to Esprit prohibited bureaucratic competition from having a real effect on Esprit.

[93] Interview, Mr Geoffrey Pattie, 9 November 1992.

British Policy in Esprit: January 1988 to April 1991
Chapter 9

From September 1984 to June 1987, civil servants in the DTI worked under three different Secretaries of State who did not establish control over the Department or infuse it with their objectives. Lord Young's arrival heralded a change. Early in his tenure, he began to assert control and although his policies were not formalized during his first six months in office, the outlines of those objectives were plain. Finally, in January 1988, he clearly and forcefully articulated his policy objectives in a White Paper. At the same time, he reformed the DTI's organization and procedures for implementing Community R&D programmes. The reforms placed a single division in charge of overseeing the activities of all divisions with responsibility for EC R&D. The hypotheses advanced in this thesis expect to find civil servants faithfully implementing the policies of their Minister when the objectives are clearly articulated, when Ministers have established control and when organizational structures and procedures ensure faithful implementation of those objectives. The hypotheses also predict a lessening of bureaucratic competition in the Department and a consequent reduction, if not elimination, of the effect such competition can have on British policy-making.

9.1 'Innovation Policy' in the Department of Trade and Industry

In June 1987, the DTI had welcomed Lord David Young as their Secretary of State. During his first six months in the Department, Lord Young kept a low profile while redefining his Department's objectives, but in January 1988 he published them in a White Paper, entitled 'DTI -- The Department for Enterprise'.[1] The rechristened Department was no longer in the business of subsidizing industry. It was now something of a publicist: it would provide information about and encourage businesses to use 'new approaches', whether it be management or technology, in their operations.[2] Accordingly, most of the DTI's budget would go toward subsidies for consultancy services, training, technology transfer and awareness programmes.

The Department's new R&D policy was also set out in the White Paper. 'Innovation policy', as it was now called, had four planks. First, the Department would shift responsibility for research onto companies and off Government. Second, if companies needed financial support for R&D, they should turn to the EC's Framework

[1] Department of Trade and Industry, 'DTI -- the Department for Enterprise' (London: HMSO, 1988), p. 5.
[2] *Ibid.*, p. 3.

Programme rather than relying on national R&D programmes. EC R&D would take priority over national R&D programmes. Third, the DTI would fund a limited amount of research, but only where it had widespread benefits, where it facilitated technology transfer and where it was necessary to develop commercial applications. Fourth, all DTI funded R&D, whether on a national or EC level, had to be monitored and evaluated to ensure that it was giving 'value for money'. The fourth plank of the DTI's R&D policy reflected the 'value for money' and 'efficiency' concerns that were now indelibly inscribed in the Whitehall lexicon.

All research programmes that did not fit the philosophy of the 'innovation policy' were discontinued or rejected. The Microelectronics Industry Support Programme, the Support for Software Products and the Fibreoptics and Optoelectronics scheme were canceled.[3] Then, the long awaited verdict on IT86 was given.

There would be no Alvey 2 as envisioned by the IT86 Committee. Lord Young explained that the Government had already agreed to support Esprit II, which, under the Treasury's attribution formula, would require a £200 million contribution from the DTI budget to the EC's Framework Programme budget.[4] There was no justification for financing a large research programme at the national level if research could be financed through Esprit II. In this spirit, the DTI's new IT R&D policy was to 'encourage the participation of UK companies in technological collaboration with other European firms and research communities, including programmes such as ESPRIT and RACE' (Research in Advanced Communications in Europe), ensure complementarity between EC and national R&D programmes and to get 'value for money' from both national and EC R&D spending.[5]

Lord Young rejected IT86's £1 billion programme but allocated a meager £29 million over three years, to be combined with a £55 million contribution from the SERC, for a small national collaborative IT R&D programme. Projects approved for funding could have up to 50 per cent of their research costs covered by the DTI/SERC programme. This was not the Applications Scheme recommended by the IT86 Committee nor was it a stand-alone programme. All projects funded under this programme had to be 'complementary' to Esprit.

The White Paper formalized a major policy shift some DTI civil servants had recognized as inevitable: European R&D programmes had replaced national ones. Although some civil servants expected a policy shift of this nature, they had not foreseen the extent of it. They had surmised that Esprit II would kill the £1 billion IT86

---

[3] *Ibid.*, p. 33.
[4] *Ibid.*, p. 36.
[5] *Ibid.*, p. 35.

programme, but they had hoped that Lord Young would approve a small national IT Applications programme. He did not. Mr Macdonald explained the decision.

> ...the Department as a whole had moved away from seeing IT as the central thing in the whole firmament. Several UK companies involved in Alvey were not half as strong as they had been in 1981 and 1982 and it was clear that Esprit and RACE were absorbing large sums of money. Ministers were thinking, 'Crikey, we already have Esprit growing out of all expectations and of all the other things that we can spend money on, let the EC spend it on IT. IT has had its turn. IT is not the only thing in the world. What about space, biotechnology? IT has Esprit anyway. IT can't have its cake and eat it too.' These were very powerful arguments.[6]

Lord Young's objectives regarding Esprit were clearly and forcefully set out in the White Paper. They were frequently repeated. A few examples will suffice. Immediately after Lord Young published his White Paper, the House of Commons Select Committee on Trade and Industry announced that it would examine the state of information technology in the UK. Lord Young was invited to discuss his Department's IT policy. He reiterated the shift away from national IT R&D toward European Community IT R&D.

> The Department's objectives include the encouragement of collaborative research and of technology transfer and the result of the review of innovation policy has been to give this greater emphasis including collaboration in Europe.[7]

> In recent years European programmes -- such as ESPRIT and RACE -- have assumed much greater importance, reflecting the significant scale of investment required in IT research and development programmes and the need for European firms to collaborate in order to match the efforts being made by their major US and Japanese competitors.[8]

Ministerial objectives were also reiterated in the House of Commons. Mr John Butcher, Parliamentary Under Secretary of State for Industry and Consumer Affairs, was asked whether the Government's rejection of the IT86 programme and its meager £29 million allocated for a national programme left a large void. Mr Butcher responded that his Department's shift toward European R&D was an appropriate means to fill any

---

[6] Interview, Mr Alastair Macdonald, 28 October 1992.
[7] Memorandum from the Department of Trade and Industry, House of Commons Trade and Industry Committee, First Report, Session 1988-89, *Information Technology*, Volume II (London: HMSO, 1988), p.5.
[8] *Ibid.*, p. 193.

'void': 'So we are following up Alvey in the right way in collaborative and pan-European research'.[9]

9.2 Organizing for Implementation

Ministers clearly articulated their objectives. They also designed structures and procedures that would ensure faithful implementation. First, they put a check on the ability of civil servants to authorize spending. Second, they redesigned the IT hierarchy and strengthened RTP to make 'free-wheeling' among divisions impossible.

Prior to Lord Young and Mr Clarke's arrival at the DTI, civil servants had to have their research budgets approved by Ministers, but once those budgets were approved, civil servants were free to spend them without Ministerial oversight. When Mr Clarke arrived, he stipulated that any research project qualifying for Government support of £50,000 or more had to be approved by him personally. According to Dr Thynne, 'As you know, £50,000 is peanuts. As you can imagine, his in-tray grew by 6 inches a day. He didn't care and he didn't read the proposals. This was his way of stopping the department spending on things he didn't approve of anyway. There was an enormous log-jam.'[10]

9.2a Information Engineering Directorate

The White Paper authorized a new national IT R&D programme that combined £29 million from the DTI and £55 million from the SERC. The new programme, called the Joint Framework for Information Technology (JFIT), was a blanket programme under which numerous small programmes, pooling funds from the SERC and several DTI divisions, were funded. Most of the £29 million authorized by Lord Young for national IT R&D was combined with SERC money to financed research in devices, systems architectures and systems engineering under a £61 million JFIT programme called the Information Engineering Advanced Technology Programme (IEATP).[11]

---

[9] House of Commons, Oral Answers, 13 April 1988, *Hansard* (Vol. 131, col. 151).
[10] Interview, Dr John Thynne, 15 October 1992.
[11] The JFIT structure grew quickly and DTI money from divisions other than the IED was contributed. In addition to the Information Engineering Advanced Technology Programme, JFIT incorporated Open Systems Standardisation Programmes, Gallium Arsenide, Optoelectronics, Superconductivity, Technology Transfer Programmes and some LINK projects that funded research between industry and Higher Educational Institutions. Correspondence to DTI from Dr Timothy Walker, March 1988; Department of Trade and Industry, 'Programmes Run Under the Joint Framework for Information Technology, internal mimeo, 15 September 1992; and Memorandum from the Department of Trade and Industry, *op. cit.*, in note 7, pp. 194-195. See also, *Independent*, 18 June 1990, p. 16.

The White Paper referred to a 'new unit' that would implement all collaborative research activities in the field of IT, which included JFIT and Esprit. This unit was named the Information Engineering Directorate (IED), which was a new name for the Alvey Directorate that Dr Walker had been leading since November 1987. Like the Alvey Directorate before it, the IED was staffed by civil servants and industrial secondees.

Industrial secondees in the IED had limited authority relative to their predecessors in the Alvey Directorate. They were seconded for a two-year period only and given a rank of G5. (Alvey secondees did not have time limits on their secondments and some were given a G3 rank.) They did not independently make funding decisions, but instead implemented decisions made by a higher authority, ITAB. Their spending authority was checked. For example, Dr Dennis Potter, an industrial secondee of G5 rank in charge of a branch of the IED, was empowered to implement programmes, but he did not have the power to commit formally DTI money. He had to have a civil servant in his branch and of G6 sign a cheque allocating DTI funds.[12]

The IED was divided into five sections: Administration, Devices, Systems Architecture, Systems Engineering and International Affairs. The International Affairs section was much stronger than its predecessor in the Alvey Directorate. It needed to be: Lord Young created the IED expressly to 'allow better coordination of support for European and national work in this area [IT R&D]'.[13] The IED's tasks were to make the best use of Esprit and to ensure that national R&D programmes were 'complementary' to Esprit. The International Affairs section was on equal footing with the four other sections. Dr AJ Wallard, who was brought in from RTP, was its director and he had responsibility for Esprit and a number of other EC IT programmes. Reporting to Dr Wallard was the Esprit Planning Office, which was staffed by six civil servants.[14]

Dr Wallard's appointment caused a stir in the IED. Prior to January 1988, Esprit had been the responsibility of Mr Roger Hird. Mr Hird was not at all satisfied with the new arrangement: 'I told Tim Walker that if I lose Esprit, you lose me. I lost Esprit.'[15] Mr Hird was moved to the DTI's office in the West Midlands. Esprit was still contested territory.

---

[12] Interview, Dr Dennis Potter.

[13] 'DTI -- the Department for Enterprise', *op. cit.*, in note 1, p. 36.

[14] Mr John Head-Rapson led the Esprit Planning Office and was assisted by Mr Derek Flynne, Mr Des Langford and three other civil servants. Interviews, Dr AJ Wallard; and Mr John Head Rapson.

[15] Interview, Mr Roger Hird, 28 October 1992.

Unlike the Alvey Directorate prior to November 1987, the IED and the Esprit Planning Office were firmly within the DTI hierarchy. Dr Walker, an Under Secretary, reported to Mr Alastair Macdonald, a Deputy Secretary, who reported to the Permanent Secretary, Sir Brian Hayes, and to the Minister for Trade and Industry, Mr Kenneth Clarke (who was later replaced by Mr Anthony Newton).[16]

A new advisory structure, called the Information Technology Advisory Board (ITAB) was created to advise the IED and SERC on research priorities and funding allocations for JFIT. Reporting to ITAB were three committees (devices, systems architecture and systems engineering) and numerous sub-committees whose nearly 200 members were academics and industrialists involved in IT as well as users of IT products and services.[17]

ITAB proved to be a very effective and powerful organization. None of the infighting that took place in the Alvey Steering Committee occurred in ITAB nor did the IED side-line ITAB as the Alvey Directorate had the Alvey Steering Committee. According to Mr Macdonald, the 'ITAB has come damn close to executive authority. We would not go against an ITAB funding suggestion, but the cheques would have our signature'.[18] Dr David Worsnip agreed: 'ITAB has a monopoly of IT in the UK. There is no way you can avoid ITAB if you want Government funding if you want to do R&D in IT.[19]

9.2b Research Technology Policy Division

The linchpin in the increasingly hierarchical structure for Departmental R&D policy-making was RTP division.[20] RTP was given responsibility to coordinate all divisions' spending on national R&D and to oversee the entire department's activities related to the Community's Framework Programme. It undertook these in several ways. First, it organized and chaired the Science and Technology Assessment Management Group (STAMG). Recall from Chapter 4 that STAMG was comprised of civil servants from all the main spending units of the DTI. In this forum, the DTI's entire R&D budget was allocated. Ministers were 'informed' of the allocations and could accept, reject or

---

[16] *Civil Service Yearbook* (London: HMSO, 1988); and *Civil Service Yearbook* (London: HMSO, 1989). Mr Macdonald had responsibility for six divisions involved in IT: Information Engineering Directorate, Information Technology, Telecommunications and Post Office, Radiocommunications; Manufacturing Technology and Materials and the Enterprise Initiative. Each of the divisions under Mr Macdonald was led by an Under Secretary.

[17] Department of Trade and Industry, departmental mimeo, 'DTI/SERC IT Advisory Committee Structure', February 1989.

[18] Interview, Mr Alastair Macdonald, 28 October 1992.

[19] Interview, Dr David Worsnip.

[20] RTP's formal responsibilities are found in the *Civil Service Yearbook*, *op. cit.*, in note 16.

amend them.[21] STAMG was advised by 16 specialist advisory committees, staffed by industrialists, called the Technology Requirements Boards. RTP provided liaison between STAMG and the Technology Requirements Boards.

Second, RTP was given authority to approve and monitor specific Departmental R&D programmes according to 'value for money' criteria. RTP had begun developing a procedure in late 1986 for this purpose. The procedure, called ROAME analysis, was formalized and applied to most DTI R&D spend following the publication of the White Paper.[22]

ROAME was an acronym for: Rationale, Objective, Appraisal, Monitoring, Evaluation. Each R&D programme funded by the DTI had a ROAME statement prepared by civil servants responsible for the programme. The ROAME statement was sent to RTP division and the programme was approved only if RTP decided that it complied with Lord Young's objectives for Government funded R&D. According to Dr Ken Guy, ROAME ensured that civil servants in the DTI stuck to the 'party line' and that their Minister's view 'permeates all divisions', including the IED.[23]

Third, all divisions with responsibility for programmes under the EC's Framework Programme had to brief RTP on their objectives for and activities in those EC programmes. In this way, RTP ensured that divisional interests and activities were compatible with Ministerial objectives.

Fourth, in addition to coordinating departmental R&D spending and overseeing divisions' involvement in EC R&D programmes, RTP also had a hand in programme implementation. It was the secretariat for EUREKA and it implemented BRITE (Basic Research in Industrial Technologies for Europe), another EC IT R&D programme. It also represented the UK in the EC's MONITOR programme, which was created in 1989 to evaluate EC R&D programmes.

9.3 Implementation: January 1988 to May 1989

Through a complex consultation procedure involving the Esprit Planning Office, other members of the IED, ITAB and RTP, *Minister's objectives in Esprit were implemented.* British participation in Esprit increased enormously, complementarity between Esprit and the national IT R&D programme (IEATP) was pursued and 'value for money' considered.

Esprit was of utmost importance in all decision-making and timely and accurate information about the Commission's plans for Esprit were essential. The Esprit

---

[21] Interview, Dr Alastair Keddie.
[22] Interviews, Mr Philip Hills; Dr Philip Roe, 4 November 1992; Mr Adrian Grilli, 11 February 1993.
[23] Interview, Dr Ken Guy.

Planning Office was responsible for gathering, analyzing and providing the IED and ITAB with this information.[24] Whether intentionally or through a failure of communication, the Commission released remarkably little information on Esprit.[25] As Mr Head-Rapson, who was in charge of the Esprit Planning Office, put it, 'The Commission was very bad at telling people what they were doing. Actually, they were appalling. It was pathetic'.[26]

Because Esprit information was vital to the operations of the IED, Mr John Head-Rapson and his team devised a 'much more coherent and structured process for dealing with Esprit' than had been applied by his predecessors in the Alvey Directorate.[27] Two means of obtaining valuable information were devised.[28] First, the Esprit Planning Office gathered information from British representatives on the committees that created Esprit's yearly workplan. Many of those representatives were members of the ITAB committees and had been recommended to the Commission by the Esprit Planning Office. The representatives briefed the Esprit Planning Office on the final shape of the workplan long before the Commission published it in the *Official Journal*. Second, a similar process was used when project proposals were evaluated. Recall that the Commission invited teams of experts to Brussels for several days to evaluate proposals and recommend ones for funding. The final funding decisions were the Commission's prerogative, but British experts, on their return to the UK, could tell the Esprit Project Office which projects they felt were likely to be funded. The Esprit Project Office could then piece together a fairly accurate picture of Esprit before an official announcement of approved projects was made.

The Esprit Planning Office briefed ITAB and its committees on the shape of Esprit. ITAB, in consultation with the SERC and IED, would then design its JFIT and IEATP workplans in such a way to avoid duplication. If the Esprit trajectory changed, the JFIT strategy would be modified accordingly. Similarly, individual IEATP projects would be funded only if they were complementary to ones funded through Esprit. According to Mr Head-Rapson, this was a continual process of 'iteration' through which the JFIT strategy and funding decisions were made dependent on and

---

[24] Interviews, Mr John Head-Rapson; and Mr Derek Flynne, 3 December 1992.

[25] An independent board empowered to evaluate the Framework Programme leaned toward the former. It referred to the 'dirigiste' style of DGXIII where 'people are encouraged to stay too long in their posts, where over time they acquire proprietorial attitudes to the programmes and lines which they are charged to administer'.'The Report of the Framework Programme Review Board' (Brussels, June 1989), p. 10.

[26] Interview, Mr John Head-Rapson.

[27] Interviews, Mr John Head-Rapson; and Dr AJ Wallard.

[28] Interviews, Mr John Head-Rapson; Dr AJ Wallard; Mr Derek Flynne, 9 December 1991; and Mr Des Langford.

complementary to Esprit.[29] The UK strategy was a 'moving feast with broad lines around it. It had to be juggled depending on where Esprit projects were falling. But that was the nature of the beast. It was a dreadful exercise to coordinate'.[30]

RTP was involved in the process as well. RTP had responsibility for approving and monitoring individual programmes, such as IEATP, that were funded under JFIT. Every programme under JFIT had a ROAME statement that went to RTP for approval. If the ROAME statement did not prove 'value for money' (that is, place the programme within the department's overall spending priorities, as established by the Technology Requirements Boards, STAMG and Ministers) and if it did not fit within the Department's policy toward the Framework Programme, the programme could be rejected.[31] The programme was then evaluated by RTP every year or six months, depending on the duration of the programme. If the programme was not meeting the objectives set out in its ROAME statement, RTP could terminate it. Mr Hills suggested that few programmes were terminated because civil servants learned how to tailor the ROAME statements to ensure continuation of their project. Nevertheless, it was an extremely effective controlling device that allowed RTP to have a hand in ensuring their Minister's objective of complementarity between national and EC R&D.

Through these processes, IEATP was subordinated and made complementary to Esprit. According to Mr Macdonald,

> Esprit was the cornerstone of British IT policy at the time. Esprit money was big compared to the DTI. We took the attitude that anything we could have done in Esprit, then we will look to Esprit first. We will look to the national programme to be filling in Esprit cracks....[32]

In fact, the IED was empowered to find only £29 million worth of Esprit 'cracks'. This is a complete reversal of the policy undertaken by the Alvey Directorate when it attempted to fill Alvey gaps with Esprit projects.

In addition to ensuring that national R&D programmes were complementary to Esprit, the IED was instructed to maximize British participation in Esprit. The Esprit Planning Office set about this in several ways. First, they made certain that Esprit was well-publicized. The Esprit Planning Office maintained a very large database of British researchers interested in Esprit. After the workplan had been formalized, the Esprit Planning Office mailed copies to hundreds of potential participants and invited any interested parties to information days where the workplan was explained. The Esprit

---

[29] *JFIT News*, Issue No. 2, March 1989, p. 2.
[30] Interview, Mr John Head-Rapson.
[31] Interviews, Dr John Thynne, 15 October 1992; Mr John Head-Rapson; and Mr Philip Hills.
[32] Interview, Mr Alastair Macdonald, 28 October 1992.

Planning Office also mailed copies of the Commission's formal calls for proposals. These mail-outs were done even though both the workplan and the call for proposals appeared in the *Official Journal*.

Once the Commission had issued a formal call for proposals, the Esprit Planning Office acted as a marriage broker. It analyzed the call and contacted, and often visited, researchers who seemed well-suited to particular research projects in the call. The Esprit Planning Office also helped researchers prepare Esprit applications. When applications were rejected, the Esprit Planning Office tried to find out why by contacting British representatives on the review boards. The Esprit Planning Office then briefed unsuccessful applicants on why their proposal was rejected in order for the applicant to prepare a better proposal in the next round. As Mr Head-Rapson put it, 'We performed a post-mortem'.[33]

The Esprit Planning Office also lobbied Brussels directly on behalf of British researchers. Recall that teams of experts recommended projects for approval to the Commission, but the Commission had the final decision. When the Commission deliberated, members of the Esprit Planning Office, who also sat on the EMC, pressured the Commission to approve 'high priority' projects. The Esprit Planning Office had copies of all Esprit proposals involving British researchers. Those projects were discussed in ITAB meetings and some were labeled 'high priority'.[34] Priority was usually determined on the size of the project and the strength of the consortium. In lobbying the Commission, the Esprit Planning Office was able to exert influence 'only at the margins' because it was one of 12 member states lobbying for priority projects.[35]

The number of British applications to Esprit soared. This was no doubt partially due to the fact that very little national funding for IT R&D was available and researchers had no choice other than to turn to Esprit. Nevertheless, the workings of the Esprit Planning Office can not be discounted. In March 1988, the Commission had received more than 1,500 proposals; half of those involved UK participants.[36] In November 1988, 128 UK organizations had been awarded Esprit II contracts; 68 were first time participants.[37]

Finally, all R&D, whether it be national or European, had to be monitored and evaluated to ensure 'value for money'. The IED's IEATP projects were subjected to the ROAME process, but RTP could not perform the same analysis of projects funded through Esprit. Nor could the Esprit Planning Office. RTP and the Esprit Planning

---

[33] Interview, Mr John Head-Rapson.
[34] Interview, Mr John Head-Rapson.
[35] Interview, Mr John Head-Rapson.
[36] *Financial Times*, 21 March 1988, p. 8. See also *Computer Weekly*, 23 June 1988, p. 2; *Electronics Times*, 12 May 1988, p. 6.
[37] *British Business*, 4 November 1988, p. 12.

Office could, however, pressure the Commission to perform its own evaluations and improve its existing monitoring techniques.[38]

RTP sponsored an international workshop to explore the various means by which Government funded R&D programmes were evaluated and assessed in Europe and elsewhere. RTP's agenda was made very clear by Dr R Coleman, the DTI Chief Scientist and head of RTP division, in his opening speech at the workshop: 'there is a Community out there who also have to be convinced to some extent of the value of such [assessment and evaluation] techniques'.[39] Also in this vein, RTP helped create the EC's MONITOR programme.[40] Approved in 1989 for four years, MONITOR was to design strict monitoring and evaluation procedures to be applied to all Community R&D.[41]

Thus, during this period *the Esprit Planning Office pursued all policies articulated by Lord Young and his Ministers toward Esprit. Those objectives had been clearly and forcefully articulated and they were consistent and compatible.* Civil servants were to maximize British participation in Esprit and allocate a limited budget to projects complementary to Esprit. There were no competing priorities for civil servants in the IED. *Ministers had established control.* By requiring that funding for large projects had to have their personal approval, they reduced the scope for independent decision-making on the part of civil servants. *Ministers also created structures that ensured the faithful implementation of these objectives.* The organization responsible for Esprit, the Esprit Planning Office, was lodged firmly in a strong IT hierarchy. The Esprit Planning Office was further scrutinized by RTP, which was headed by the Chief Scientist and which was linked into the STAMG and the Technology Requirements Boards. *Bureaucratic competition was not extinguished by these conditions: Esprit remained contested territory as civil servants worked to gain budgets and responsibilities. That competition was not, however, allowed to have a real effect on British policy in Esprit.*

Reinforcing the new structures and procedures that minimized 'free wheeling' were two scathing reports on the Alvey Directorate published by the Committee of Public Accounts and the National Audit Office. In early 1988, these organizations

---

[38] Interview, Mr John Head-Rapson.

[39] Luke Georghiou and Eric Davis (eds.), *Evaluation of R&D: A Policymaker's Perspective*, Proceedings of the International Workshop on Assessment and Evaluation, 17-18 November 1988 (London: HMSO, 1988), p. 3.

[40] Interview, Dr Phillip Hills. See also testimony of Mr Robert Foster (DTI), House of Lords Select Committee on the European Communities, *A Community Framework for R&D*, 17th Report, Session 1989-90, HL Paper 66 (London: HMSO, June 1990), p. 14.

[41] 'Council Decision Adopting a Community Programme in the Field of Strategic Analysis, Forecasting and Evaluation in Matters of Research and Technology (Monitor)', 89/414/EEC (Brussels: *Official Journal of the European Communities*, No L 200, 13 July 1989).

decided to evaluate the success of the Alvey Programme and the effectiveness of the Alvey Directorate. They gathered evidence by reading confidential papers, evaluations, internal audits and by interviewing Sir Brian Hayes, the Permanent Secretary, Mr Macdonald and members of the Alvey Directorate, which at that point was the IED under Dr Walker.

They were relentless in their questioning and they published two very damning reports.[42] Both reports criticized, among other things, the Directorate's financial management, its reluctance to heed the advice of experts and its weak monitoring procedures. The Public Accounts Committee was particularly disgruntled with the 'hands off' approach of the Alvey Directorate. The Committee recommended that the 'Department should take steps to ensure that any relevant lessons learned will be applied to all new collaborative projects that they support in whatever field'. With these two powerful bodies investigating the faults of the Alvey Directorate, and demanding that those faults not be repeated, the wisest course for the IED was to 'go by the book'.

9.4 More Change: May 1989 Through Early 1991

From May 1989 through early 1991, the DTI underwent major change. In May 1989, Dr Walker was moved from the IED to the Department of Energy. Dr John Thynne, who was head of the Information Technology Division, immediately and informally took on Dr Walker's responsibilities.[43] A year later, in April 1990, Dr Thynne's expanded responsibilities were formalized with the announcement that the IED was disbanded and all its responsibilities transferred to the Information Technology Division.[44]

Shortly after Dr Walker left the DTI, so did Lord Young. In July 1989, Lord Young became Deputy Chairman of the Conservative Party and Mr Nicholas Ridley became Secretary of State at the DTI. Mr Ridley was certainly no fan of Europe and his hostility toward the EC was a stark contrast to Lord Young's pro-European approach. Mr Ridley made his sentiments well known.[45] Prior to his assignment at the

---

[42] National Audit Office, Report by the Comptroller and Auditor General, 'Department of Trade and Industry: The Alvey Programme for Advanced Information Technology', House of Commons Paper 402 (London: HMSO, 24 March 1988); Committee of Public Accounts, 'The Alvey Programme for Advanced Information Technology', Fifty-First Report, Session 1987-88, House of Commons Paper 477.

[43] *JFIT News*, Issue No. 4, June 1989, p. 1.

[44] *JFIT News*, Issue No. 12, April 1990, p. 1.

[45] See Margaret Thatcher, *The Downing Street Years* (London: HarperCollins, 1993), pp. 722-723; Kenneth Baker, *The Turbulent Years: My Life in Politics* (London: Faber and Faber, 1993), pp. 357-359; and Nigel Lawson, *The View From No. 11: Memoirs of a Tory Radical* (London: Corgi, 1993), pp. 942-943.

DTI, Mr Ridley had, for example, argued fiercely against putting sterling in the EC's Exchange Rate Mechanism (ERM). After a year at the DTI, Mr Ridley resigned when the *Spectator* published an interview in which he was critical of the growing power of Germany and its Chancellor, Helmut Kohl. Mrs Thatcher replaced Mr Ridley with Mr Peter Lilley, a 'Euro-skeptic' and a 'card-carrying Thatcherite'.[46] Mr Lilley was the twelfth Secretary of State at the DTI in eleven years.

Although their sentiments toward Europe might have tended in another direction, neither Mr Ridley nor Mr Lilley reversed the fundamentals of Lord Young's R&D policy: companies should bear the burden of R&D costs, but if assistance was necessary, it should come from the European Community rather than the DTI. Mr Lilley publicly stated this policy as did his Ministers.[47] For example, in May 1991, Mr Edward Leigh, Parliamentary Under Secretary of State for Industry, put forth the Department's policy toward European IT R&D:

> The Government actively seeks complementarity as far as possible between Community and national research programmes. National programmes help to strengthen the UK's technology base and hence encourage more effective UK participation in Community research and development programmes.[48]

9.5 Esprit in the Information Technology Division

In accordance with the new Minister's demands, EC R&D remained the object around which national programmes were built and implemented. Civil servants worked to maximize British participation in Esprit and implement a small national budget for projects complementary to Esprit. Dr Thynne, now responsible for Esprit and national collaborative IT R&D programmes under JFIT, expressed the objectives of his division: 'The work of the Directorate has a major international research element and it is essential to continue integrating this into our thinking so that the resultant technology can transfer effectively and profitably into a larger market.'[49] JFIT and IEATP workplans would be designed and continuously modified to account for European programmes and JFIT funding decisions would be made in consideration of EC R&D projects. To ensure this, Dr Thynne strengthened and made more formal the decision-making structures and procedures that guaranteed faithful implementation of his Minister's objectives.

---

[46] Thatcher, *ibid.*, p. 846.

[47] 'Innovation: Competition and Culture', Speech by Rt Hon Peter Lilley, MP, Secretary of State for Trade and Industry at the University of Warwick, 21 May 1991. See also *Financial Times*, March 11, 1991, p. 30, 11 March 1991, p. 30, 30 May 1991, p. 19, 1 May 1991, p. 18.

[48] House of Commons, Written Answers, 13 May 1991, *Hansard* (Vol. 191, col. 37).

[49] *JFIT News*, Issue No. 4, June 1989, p. 1

IT Division was divided into nine branches: Administration, Devices, Systems Architectures, Systems Engineering, Control and Instrumentation, International Affairs, Computer Security and Use of IT and Software Technology. All international IT programmes were handled in the International Affairs branch, which was led by Dr AJ Wallard. Mr Derek Flynne, a G5, was given responsibility for Esprit and all other EC IT R&D programmes.[50] The Administration and International Affairs branches were staffed primarily by civil servants while the technical branches were staffed by a mix of civil servants from the DTI and SERC and industrial and academic secondees.[51] The head of each technical branch was most often an industrial secondee. The various and sundry small national IT programmes (such as Gallium arsenide, Optoelectronics, Advanced Semiconductor Materials) were implemented by the relevant technical branches.

Dr Thynne also expanded the Information Technology Advisory Board's sub-committees. In addition to the Devices, Systems Architectures and Systems Engineering Committees created under Dr Walker, he added two others: Education and Training; and Control and Instrumentation and Standards.[52] The technical branches of IT division acted as secretariats for the ITAB committees.

Perhaps most important, the procedures by which national programmes, under JFIT, were made complementary to European ones, and Esprit in particular, were strengthened and made more standard. A description of those procedures, based primarily on interviews, follows.[53]

Based on information gathered from EMC meetings, from British members of the EAB and ESC and from British researchers who sat on Esprit evaluation teams, Mr Flynne and his Esprit Planning Office prepared a paper summarizing their assessment of the direction the Commission was likely to take with Esprit. In that paper, they also recommended technology areas that should be covered in Esprit, if they were not already, and areas that should be covered by national programmes under JFIT. They sent this paper to all the technical branches of IT division, to RTP, to the Telecommunications division and to the Economics division of the DTI. Each division would comment and the Esprit Planning Office would incorporate the comments into a second draft. The second draft would then be sent to trade associations, to companies and to universities. After each body returned their comments, the Esprit Planning Office prepared a third version of the paper. The third version was then sent to ITAB and

[50] *JFIT News*, Issue, No. 13, May 1990, p. 6.
[51] Interviews, Mr Derek Flynne, 9 December 1991; and Dr Denis Potter.
[52] *JFIT News*, Issue No. 18, November 1990, p. 5.
[53] The following discussion is based on interviews: Mr Derek Flynne, 9 December 1991 and 3 December 1992; Mr Des Langford; Dr Dennis Potter; Dr John Thynne, 15 October 1992; Mr Alastair Macdonald, 21 January 1992; Ms Christine Symes; and Dr Alastair Keddie.

its numerous sub-committees, which would then accept, reject or revise the recommendations. In this way, the short-term workplans of JFIT and the UK's short-term interests in Esprit were established and national programmes were made complementary to Esprit. As Mr Flynne stressed, 'Esprit is the immovable policy object and we have to fit national programmes around it'.[54]

The general strategy of IT division was to fund standards work, research in silicon technology and research that would lead to products with a Europe-wide market through Esprit.[55] UK national programmes should fund what Dr Thynne called 'cloud on the horizon', research.

> I was on the look-out for what I call 'clouds on the horizon' -- things which we will need in Europe. I thought it was important that we build up our strength in these areas so that by the time the Europeans see its importance, we will be in the lead and can lead the programme to the best interest of UK Ltd.[56]

'Cloud on the horizon' research to be funded under JFIT included such areas as application specific circuits, neuronetworks, gallium arsenide and optoelectronics.

The strategy was then implemented by members of the Esprit Planning Office in formal meetings of the Esprit Management Committee, in informal meetings with other member states representatives and over dinner with European Commissioners. One of the most effective means of accomplishing this was to prepare a discussion document that advanced the interests of 'UK Ltd.'. The Esprit Planning Office also employed means devised earlier in the IED. They briefed British representatives to the Esprit Advisory Board and the Esprit Steering Committee. They also worked closely with British members of Esprit project evaluation teams and working parties that created Esprit workplans.

Although the Esprit Planning Office was formally responsible for Esprit, it did not monopolize access to the Commission. Mr Flynne and Dr Wallard were the official representatives to the EMC, but they frequently took the heads of the technical branches to meet with individual Commissioners. Further, although he infrequently attended EMC meetings, Dr Thynne kept very close contact with Mr Cadiou, the Commissioner in charge of Esprit.

Ministers demanded complementarity between national programmes and Esprit and they demanded that British participation in Esprit was maximized. To achieve the

---

[54] Interview, Mr Derek Flynne, 9 December 1991.

[55] See Luke Georghiou, *et. al.*, *The Impact of European Community Policies for Research and Technological Development Upon Science and Technology in the United Kingdom* (London: HMSO, 1992), p. 86.

[56] Interview, Dr John Thynne, 2 December 1992.

latter, the IT division employed similar methods used by the IED. The Esprit Planning Office published an *Esprit Newsletter* in which they reported relevant Esprit information. They prepared and updated a rather professional and lengthy brochure outlining the history of Esprit, the details of Esprit's technical coverage and the mechanisms of Esprit decision-making. They mailed out copies of Esprit calls for proposals to all researchers listed on a very extensive database of potential Esprit participants. When a project in an Esprit call looked suited to the abilities of a particular research team, the Esprit Planning Office contacted that team and, if the team was interested to apply for Esprit funds, the Esprit Planning Office helped them prepare a proposal. The Esprit Planning Office sponsored an Esprit Information Day every July, which drew over 500 delegates. They lobbied on behalf of particular projects in the EMC.

The IT division went a step further than its predecessor to ensure that British researchers got the most out of Esprit. In early 1991, the DTI hired PA Consulting, a consultancy firm, to assist British researchers obtain funds from Esprit's CIME (Computer Integrated Manufacture and Engineering) programme.[57] PA Consulting ran seminars, circulated information, matched partners and helped firms prepare Esprit applications.

Through these various means, the IT division assisted British researchers attain very high participation rates in Esprit. In May 1991, Mr Edward Leigh proudly presented the following statistics to the House of Commons: British researchers were participating in over 70 per cent of all Esprit II projects and they received nearly 18 per cent of all funds available under Esprit II.[58]

Dr Thynne pursued the interests of 'UK Ltd'. Unlike during the Alvey era, the interests of 'UK Ltd' were not independent of Esprit. In fact, Esprit was the interest of 'UK Ltd.'. As Dr Thynne asserted, 'I spent a lot of time talking to Cadiou. We always got on well together. He recognized that *I would work as hard as possible to be constructive and to protect the Commission's interest [Esprit]-- which was my interest as well by that time*'.[59] This is exactly what Ministers had intended.

Dr Thynne and members of the Esprit Planning Office were the last civil servants to influence British policy in Esprit. Dr Thynne retired from the civil service in November 1990 and Mr Keith Shotten replaced him as the G3 in charge of IT division.

---

[57] *Engineer*, 7 February 1991, p. 10.

[58] House of Commons, Written Answers, 13 May 1991, *Hansard* (Vol. 191, col. 37), See also, testimony of Mr Douglas Hogg (Minister for Trade and Enterprise, DTI), House of Lords, *op. cit.*, in note 40, p. 16.

[59] Interview, Dr John Thynne, 2 December 1992. Emphasis added.

Although Esprit II was slated to run through 1992, Mr Shotten had no role to play: Esprit funds had been entirely allocated by late April 1991.

Ministers accomplished their goals of shifting priority to European R&D, maximizing British participation in EC R&D and enforcing complementarity between national and EC programmes by several means. First, *they clearly articulated their objectives.* Civil servants in IT division were certain of what was expected of them and they were not forced, as had been the case with the Alvey Directorate, to choose between competing priorities.

Second, *Ministers established control by designing a budgetary scheme that supported their objectives.* In 1991/92, the DTI contributed as much to European IT, primarily Esprit, as it spent on all its national IT programmes, only a small portion of which were implemented by Dr Thynne's IT division.[60] The only significant source of budgets and responsibilities for Dr Thynne's division came from Europe. Not surprisingly, Dr Thynne turned his attention to Europe. Ministers had successfully harnessed the ubiquitous desire of civil servants for increased budgets and responsibilities to the pursuit of Ministerial objectives. *The interests of Ministers and civil servants had become complementary -- pursuit of one facilitated pursuit of the other.* As Professor Roger Needham concluded, 'The achievement of the post-Alvey DTI has been to turn that around [the preference for national programmes over Esprit]. They have done this by bureaucracy. They have turned around preferences toward Esprit. The result of the DTI bureaucracy has been to put the DTI at the bottom of the list and not Esprit'.[61] Ministers had achieved their objectives. *Bureaucratic competition was not eradicated, but rather its energies were channelled to another end.*

Third, *Ministers created organizational structures that ensured faithful implementation of their objectives.* The Esprit Planning Office was firmly embedded in a departmental hierarchy extending upwards through IT division, RTP division, STAMG and the Permanent Secretary to reach Ministers. No autonomous decision-making could be enjoyed by any unit of the DTI handling R&D issues.

9.6 Exit Esprit

Few researchers noticed that Esprit had ended. It had been quietly replaced by another EC IT R&D programme of a slightly different name. The new programme was called A Specific Programme of Research and Technological Development in the Field of

[60] Interview, Ms Diane Williams.
[61] Interview, Professor Roger Needham.

Information Technology, which was often shortened to the unfortunate acronym ASPIT or simply called Esprit III. The new programme was part of the Third Framework Programme (1990-1994), which had been proposed by the Commission in August 1989 and approved in April 1990.[62] The new IT R&D programme, proposed in July 1990, was approved in principle in April 1991 with a budget of approximately ECU 1.4 billion[63] and officially approved in July 1991.[64] The new programme would run to December 1995 and pick up where Esprit II left off by funding research in microelectronics, software engineering and information processing systems, advanced business and home systems, peripherals, computer integrated manufacturing and engineering and basic research. Esprit had been replaced.

9.7 Conclusion

At the beginning of the period examined in this Chapter, civil servants in the DTI worked under a forceful Minister who clearly articulated a set of coherent and compatible objectives as regards IT R&D. The DTI would: give EC R&D priority over national R&D; ensure maximum British participation in EC R&D programmes; see that all national IT R&D programmes were complementary to EC ones; and seek 'value for money'. Lord Young's successors maintained these policies.

Lord Young and his Ministers kept close control over civil servants by implementing a strict spending regime. Ministers personally approving all expenditure of any significance. Most important, by rejecting the IT86 proposal and approving Esprit II, they established a budgetary regime that harnessed civil servant s'desire for increased budgets and responsibilities to the advancement of Ministerial objectives. Esprit had become the major source of budgets and responsibilities for civil servants handling IT R&D issues. *As Bureaucratic Politics would predict, civil servants gave priority to the issue that catered to those desires: Esprit. This is exactly as Ministers intended. The interests of Ministers and civil servants had become complementary -- pursuit of one facilitated pursuit of the other.*

---

[62] Commission of the European Communities, 'Proposal for a Council Decision Concerning the Framework Programme of Community Activities in the Field of Research and Technological Development (1990 to 1994)', Com(89) 397 final (Brussels: *Official Journal of the European Communities*, No. C 243, 23 September 1989). *Council Decision Concerning the Framework Programme of Community Activities in the Field of Research and Technological Development (1990 to 1994)*, 90/221/Euratom, EEC (Brussels: *Official Journal of the European Communities*, No. L 117, 8 May 1990).

[63] Reuters News Service, 21 April 1991.

[64] *Council Decision Adopting a Specific Research and Technological Development Programme in the Field of Information Technologies (1990 - 1994)*, 91/394/EEC *(Brussels: Official Journal of the European Communities*, No L 218, 6 August 1991).

Ministers reorganized the DTI hierarchy into a tight ladder structure with themselves sitting firmly atop. Complementing organizational change were reforms that established strict procedures for R&D decision-making. Those procedures allowed RTP to be the keeper, so to speak, of Ministerial objectives. The Esprit Planning Office was incorporated within the DTI's strict IT hierarchy, it was forced to adhere to the Department's decision-making procedures and it was supervised by a strong RTP division. Mr Ridley and Mr Lilley adopted the centralized decision-making structures and procedures designed by Lord Young. In 1990, the House of Lords Select Committee on Science and Technology 'commended' the DTI for its handling of international science and technology issues.[65] This was a radical departure from the stream of harsh criticism the Lords had, since the early 1980s, levied on Government science and technology policy-making.

As a result of these various factors, civil servants implementing Esprit faithfully pursued the objectives established by their Ministers. *Bureaucratic competition was ever present, but it was not permitted to have a detrimental effect on Ministerial objectives in Esprit.* In fact, it could be said that *bureaucratic competition facilitated the implementation of Ministerial objectives.* Evidence in this Chapter leads to the conclusion that *while insights from Bureaucratic Politics can help explain the interests of individual bureaucrats, it does not always provide an explanation of policy.*

[65] House of Lords, *op. cit.*, in note 40, p. 31.

Chapter 10
Conclusion

This thesis began with the questions, 'Who makes British foreign policy and whose interests are being advanced?'. Ministers or civil servants? Literature on the policy process and evidence gathered for this thesis is mixed.

For example, in his book, *Arguments for Democracy*, Mr Anthony Benn wrote that,

> ...the civil service sees itself as being above the party battle, with a political position of its own to defend against all-comers, including incoming governments armed with their philosophy and programmes.[1]

Richard Crossman was surprised by the power of civil servants.

> I realise the tremendous effort it requires not to be taken over by the Civil Service. My Minister's room is like a padded cell, and in certain ways I am like a person who is suddenly certified a lunatic and put safely into this great vast room, cut off from real life and surrounded by male and female trained nurses and attendants. When I am in a good mood they occasionally allow an ordinary human being to come and visit me; but they make sure that I behave right, and that the other person behaves right; and they know how to handle me....It's also profoundly true that one has only to do absolutely nothing whatsoever in order to be floated forward on the stream.[2]

Opposing viewpoints exist. In his memoirs, Lord Carrington dismissed the caricature of the civil servant who is 'determined to frustrate the will of ministers, by courteous, ingenious and constitutionally proper means, if the ministerial will or policy threatens the cosy and established civil service consensus, the bureaucratic inertia, the status quo'.[3]

Sir Brian Hayes, a former Permanent Secretary at the DTI, attested to the following.

> The civil servant has no power of his own. He is here to help a Minister and to be the Minister's agent....I think the job of the civil servant is to make sure that his Minister is informed; that he has all the facts; that he's made aware of all the options and that he is shown all the considerations bearing on those options. It

---

[1] Anthony Benn, *Arguments for Democracy*, Chris Mullen (ed.), (London: Cape, 1981), p. 50.
[2] Anthony Howard (ed.), *The Crossman Diaries* (London: Mandarin, 1991), p. 25.
[3] Lord Peter Carrington, *Reflect on Things Past: The Memoires of Lord Carrington* (London: Collins, 1988), p. 146.

is then for the Minister to take the decision. That is how the system ought to operate and that is how I think, in the vast majority of cases, it does operate.[4]

Sir Edward Heath gave the following evidence in 1977 to the House of Commons Expenditure Committee:

> ...I believe that civil servants like to be under ministerial control. There is nothing they dislike more than to have a minister whom they feel is weak, who does not know his mind and who wants to leave it to them. That is not their mentality or approach....What they like is to have a minister who knows a policy he wants to pursue, who will take advice on the consequences of it, and how it can be implemented....[5]

According to David Vital, 'The influence of the civil service on British policy-making is certainly very powerful, but what chiefly characterizes its relations with the political component of the hierarchy is nevertheless its fundamental and ultimate docility'.[6] 'The making of foreign policy, then, is the business of the Executive and for almost all practical purposes the Executive is unfettered in its exercise of this function.'[7] For Vital, the Executive is the Cabinet and in that, the Prime Minister's is 'probably by far the most powerful single office'.[8]

It seems that the literature renders a search for a definitive answer to the questions, 'Who makes British foreign policy and whose interests are being advanced?', inconclusive. I did not find the solution during the course of my research. Rather, it suggests that policy results from a dynamic, often tumultuous and unstructured, social process involving Ministers and civil servants in relationships of mutual dependency.[9] Dependence does not mean that Ministers and civil servants have an equal influence on policy at all times and on all issues: one or the other may be dominant. Consequently, the pertinent question is, 'Whose input is more significant at a particular point in time or on a particular issue?'. Because the answer may be 'civil servants', foreign policy analysts should have at their disposal tools for analyzing policy-making if and when that occurs. The Bureaucratic Politics perspective is one tool that analysts could keep

---

[4] Quoted in Clive Ponting, *Whitehall: Tragedy and Farce* (London: Hamish Hamilton, 1986), p. 12

[5] House of Commons Expenditure Committee, *The Civil Service*, Eleventh Report, Session 1976-77, HC 535-II (London: HMSO, July 1977), p. 764.

[6] David Vital, *The Making of British Foreign Policy* (London: Allen & Unwin, 1968), p. 46.

[7] *Ibid.*, p. 49.

[8] *Ibid.*, p. 53.

[9] Gavin Drewry and Tony Butcher, *The Civil Service Today*, Second Edition (Oxford: Basil Blackwell, 1991), put forth this argument. See also Bruce Headey, *British Cabinet Ministers* (London: Allen and Unwin, 1974); Brian Smith, *Policy Making in British Government* (Oxford: Martin Robertson, 1976); and G.K. Fry, *The Administrative 'Revolution' in Whitehall* (London: Croom Helm, 1981).

in their tool kits. But is it strong enough and is it appropriate for a study of British foreign policy-making?

10.1 A Brief Review

I was under no false illusions about the Bureaucratic Politics perspective. It has weaknesses and some are so significant that they threaten to render the perspective ineffectual. This thesis recommended ways to fortify the perspective, while remaining faithful to its basic propositions. I briefly summarize the fundamental propositions of the perspective, its weaknesses and the reformulations advanced in this thesis. The merits and demerits of the reformulation are evaluated and areas for future research suggested. Finally a verdict is passed on the applicability of the Bureaucratic Politics perspective to a study of British foreign policy-making.

The basic argument of the perspective is simple: bureaucrats have interests that are often not synonymous with the objectives of their Ministers; those interests are determined by the bureaucrat's position in the bureaucracy; bureaucrats compete to protect or advance those interests; and that competition can determine a country's foreign policy. Its simplicity is, however, marred by several fallacies and untenable propositions.

First, the Bureaucratic Politics perspective advanced by Allison and Halperin was founded on an untenable dichotomy. In order to distinguish their perspective from the traditional approach (called the Rational Actor Model), which saw policy-making as a harmonious process involving actors unified in their goals, they suggested that policy-making was, in fact, a conflictual process involving bureaucrats competing for different and often contradictory goals. The Bureaucratic Politics Model was the name given to describe the latter. Their theoretical construct forced the untenable conclusion that competition among bureaucrats was not rational behaviour. The solution proposed in this thesis is self-evident: all behaviour where means are geared to ends should be taken as rational. This is regardless of whose behaviour it is, whether conflict is visible or invisible or which means are employed and to what end.

Second, Allison and Halperin's model was over-stated. It suggested that bureaucrats have organizational, personal, domestic and national security interests. Bureaucrats compete against each other to protect or advance those interests and in that competition, they use 'politics', which was defined as 'pulling and hauling and intricate games'. Nebulous 'action channels', or regularized procedures for decision-making, affect the outcome of 'politics'. The net is cast so wide and the terms so loosely defined that the perspective allows (and indeed encourages) the analyst to attribute virtually any observable behaviour to bureaucratic competition. It provides no

facility for distinguishing 'politics' in aid of bureaucratic competition from 'politics' in aid of consensus-building. The explanatory and predictive power of the perspective was sacrificed for want of strict definition.

In an effort to make the perspective more discerning, this thesis defined bureaucratic competition in a strict and limited manner. Behaviour was attributed to bureaucratic competition only if it exhibited the following characteristics. First, the bureaucrat sought to maximize one or more of their occupational interests: resources, responsibility and rank. Second, the bureaucrat perceived a conflicting relationship between his or her occupational interests and those of other bureaucrats. That is, greater responsibility, for example, for one meant decreased responsibility for another. Third, the bureaucrat interpreted events in light of how they affected his or her resources, responsibilities and rank. Fourth, based on this interpretation, the bureaucrat made decisions and took action to maximize resources, responsibilities and rank. (This is the preference-from-position function.) That action may have included a variety of behaviour (for example, negotiation, coalition-building, bargaining, manipulation, deceit or domination). The action would be chosen from a menu established by action channels.

Third, the Bureaucratic Politics perspective formulated by Allison and Halperin, and employed by a number of other analysts, envisioned a world of impotent political leaders. Allison and Halperin did refer to situations when bureaucratic competition did not have a significant influence on policy, but they did not adequately theorize those situations. The result was a model with inflated claims. To bring the model back down to earth, the conditions under which bureaucratic competition may affect policy were theorized for the case of British foreign policy-making in Esprit.

The hypothesized conditions under which bureaucratic competition may have an affect on British foreign policy-making were, ironically, devised primarily from the literature arguing that bureaucratic competition is of minimal significance in British foreign policy-making. That literature pointed to two fundamental elements necessary for effective policy-making in Britain: Ministerial objectives and authority; and the Whitehall machinery. From this, I hypothesized that if competition among bureaucrats pursuing their own interests was to affect policy, it would be likely to occur in the absence of consistent Ministerial objectives, Ministerial control and oversight and machinery that effectively coordinated and controlled policy.

10.2 Evaluating the Reformulation

10.2a Rationality

The assumption that any decision or action designed to advance a particular goal is rational proved valuable and should be taken as a starting point for future studies employing the Bureaucratic Politics perspective. The assumption of rationality also cures the false dichotomy in Allison and Halperin's formulation. It allows the researcher to move beyond the theoretical debate over rationality and irrationality in human behaviour. While there may be more to be said in this debate, it was not the purpose of this thesis to do so.

The assumption of rationality also allowed the *homo bureaucraticus* of Allison and Halperin's formulation to evolve into a *homo sapien*: a being capable of acting selfishly and selflessly. Surely the *homo sapien* is the creature involved in policy-making and thus the one on which analysts should concentrate.

The assumption of rationality reduced the need to define 'politics', which like the term 'security', seems destined to be forever 'contested'. Allison and Halperin defined 'politics' as 'subtle pulling and hauling' that involved 'bargaining' along regularized channels. This thesis has sympathy for attempts to define 'politics', but is concerned that their definition did not adequately stress the boundless nature of politics: politics can be seen as any behaviour employed to a particular end. Whether we refer to bargaining, manipulation, deception, coalition-building, log-rolling or a litany of other behaviour, the relevant point is that bureaucrats choose behaviour, possibly from a menu, that is designed to advance a particular interest.

10.2b Action Channels

This thesis undertook a revision of Allison and Halperin's treatment of 'action channels'. Allison and Halperin defined 'action channels' as 'regularized procedures for producing a particular class of action' and they suggested that action channels bestow bargaining advantages on certain players in their competition against others. I found their suggestions rather weak and set out to refine them by incorporating ideas from March and Simon's work on organizational behaviour. This thesis suggested that a bureaucrat's choice of means to advance his or her occupational interests will be chosen from a menu of alternatives established by decision-making procedures and relationships between decision-makers, called action channels. Action channels were treated as dynamic. Those who have power to create them benefit in the competitive

game. By exploring these action channels, the analyst should be able to predict the means by which bureaucrats pursue their interests.

Action channels, as formulated here, proved useful in exploring the decisions and actions taken by members of the Alvey Directorate in Esprit from 1983 through 1985. The relationships that existed among decision-makers and the procedures by which they made decisions certainly guided members of the organization in particular directions. Action channels did not operate forcefully in the years from 1986 to early 1988 because they were being refashioned. True to the suggestion in this thesis, civil servants with the power to create or amend action channels did so in a manner that was to their benefit. From 1988 to 1992, the concept of action channels proved of little use as a tool of analysis. It appears that action channels are instrumental only when an organization's formal structures and procedures that regulate relationships and decision-making are weak and ineffective. In the absence of formal structures and procedures, civil servants create ones through which they can advance their own interests.

Although the concept of action channels was useful, I must conclude that its use was limited. First, as defined by Allison and Halperin and reformulated here, action channels are too vague and loosely defined. As a result, they have a tendency to become a repository for behaviour that cannot be explained according to more robust propositions. Second, I question whether action channels are not simply decision-making structures and procedures, or SOPs, disguised by new terminology. As they stand, action channels offer little more insight than the statement 'decision-makers decide'. There is no doubt that decision-making structures and procedures affect the competitive game in bureaucracies, but in future, analysts should employ a straightforward analysis of those structures and procedures rather than renaming them and imbuing them with unwarranted significance.

10.2c Interests

Allison and Halperin suggested that bureaucrats compete as they pursue personal, organizational, domestic and national security interests. This categorization of interests is so expansive and all-inclusive that the perspective is reduced to suggesting that bureaucrats compete in pursuit of anything that interests them and that policy is affected in the process. The demerits of such a sweeping generalization are obvious. To make the perspective more parsimonious, this thesis reduced the number of interests to one: occupational interests, which include the desire to maximize budgets, responsibilities and rank. Behaviour was attributed to bureaucratic competition only when bureaucrats competed in pursuit of one or more of their occupational concerns.

I found this reformulation useful during the course of my research. First, it forced me to be circumspect and cautious in attributing behaviour to bureaucratic competition. If I could identify the exact interest(s) a bureaucrat was pursuing, rather than some sweeping categories of interests, then I was confident that I was not choosing or molding the facts to fit a theory or perspective. Instead, I could test the facts against a theory or perspective. Second, unlike Allison and Halperin's model, this reformulation reduced my tendency to attribute behaviour to competition when, in actuality, it was designed to promote consensus. It is imperative that the perspective allows the analyst to distinguish the two. Consensus-building is central to government by democracy. A model that allegedly explains decision-making in a democracy should not force those who employ it to see only government by competition. Decision-making involves both competition and consensus-building and we need a perspective that allows the analyst to see both. While Allison and Halperin's simplification was made with noble intentions, it proved to be more distorting than revealing.

This reformulation has two demerits. First, by being so specific, it reduces the frequency with which the perspective can be employed. However, I believe this negative effect is more than off-set by the greater accuracy afforded by the reformulation. Second, it can easily be misconstrued as implying that the only interest a bureaucrat has is to maximize budgets, rank and/or responsibilities. In fact, the opposite is held to be true: bureaucrats have numerous interests that may combine in such a large number of permutations that no theory could attest to understanding much less predicting. What this reformulation does is single out one of those interest sets for closer attention. It does not make an *a priori* assumption that civil servants always pursue their occupational interests. Rather, it treats occupational interests as a variable in need of testing.

I believe the case for reducing bureaucratic interests to a single category is theoretically strong. Did it prove true in fact? Bureaucrats involved in Esprit from 1982-1992 did, without doubt, wish to maximize their budgets and responsibilities. During interviews, civil servants invariably referred to one, and usually, both of these interests. In fact, many civil servants boasted of their budgets and responsibilities and several admitted that responsibilities and budgets were a sign of 'virility'.

The evidence in this thesis supports the proposition that bureaucrats seek to maximize their budgets and responsibilities. This proposition should not, however, be taken as fact in future studies of British foreign policy-making. Rather, it should be tested against the evidence provided by policy-making in different time periods and in different issue areas. The Public Choice literature of recent years argues that bureaucrats do not always seek to maximize their budgets and responsibilities. Patrick Dunleavy, for example, argues that the interests of some bureaucrats would be best

served by minimizing their budgets and that some bureaucrats are interested to reduce their responsibilities.[10]

As regards rank, I cannot confidently assert that rank maximization was an interest driving civil servants involved with Esprit. Only once did an interviewer, Mr Roger Hird, refer to rank and this reference was made in the context of a criticism of another civil servant, Dr Timothy Walker. As such, I must dismiss this as evidence that civil servants sought to maximize their rank.

I was surprised to find so little evidence supporting rank maximization as a significant interest. Could it be that Esprit was unique? Throughout the decade under observation, Esprit was implemented by organizations that were staffed by a mix of civil servants and industrial and academic secondees. Because they were not career civil servants and were on temporary secondment, the secondees were not driven by a desire to maximize their rank in the civil service. Furthermore, they did not seem driven by a desire to progress within their companies. In fact, the people I interviewed who were or had been secondees suggested that someone seeking a secondment was usually bored with their work and that they did not expect to be taken back into the company from which they came.[11] They expected their secondment to offer a break from the monotony of their jobs and perhaps to lead to a job with another company, but not necessarily at a higher level of responsibility or pay. Perhaps the attitudes of secondees affected the attitudes of civil servants in the organization.

Perhaps the answer lies in the nature of those who are attracted to the civil service. The civil service offers a career and job security in return for relatively low remuneration[12] and minimal opportunities for advancement. Perhaps those who are attracted by these offerings seek little in the way of career advancement in terms of rank. Perhaps they prefer instead the more honorable aspects of the civil servants (for example, the guardians of government) or the less pecuniary benefits (for example, respect). If the latter are true, then an analysis of bureaucratic behaviour from the point of view of rank maximization is misplaced.

I am not convinced, however, that rank maximization as a bureaucratic interest should be dismissed nor am I convinced that rank maximization was not a concern of some of the civil servants involved in Esprit. A quick look at the rank of two civil

---

[10] Patrick Dunleavy, *Democracy, Bureaucracy and Public Choice* (London: Harvester Wheatsheaf, 1991); Patrick Dunleavy, 'The Architecture of the British Central State, Part I: Framework for Analysis', *Public Administration* (Vol. 67, Autumn 1989); and Patrick Dunleavy, 'The Architecture of the British Central State, Part II: Empirical Findings', *Public Administration* (Vol. 67, Winter 1989).

[11] Interviews, Dr Dennis Potter; Dr Philip Roe, 4 November 1992; Mr David Talbot; Mr Robert Morland; and Mr Chris Barrow.

[12] Mrs Thatcher set in motion a number of reforms, contracting out for example, that challenged this. Mr Major seems intent on staying her course.

servants who played a significant role in Esprit is revealing. In 1982, Mr Alastair Macdonald was an Under Secretary (G3); in 1985 he was promoted to Deputy Secretary (G2); he currently holds that rank along with six other gentlemen in the DTI; and he was recently awarded a CB. What lies in store for Mr Macdonald? Dr Timothy Walker's rise has been spectacular. In 1983/84, he was promoted to G5 and named Director of Administration in the Alvey Directorate. In 1986, he was named the Principal Private Secretary to Mr Paul Channon and later Lord Young. In 1988, he was promoted to Under Secretary (G3) and currently holds that rank. These gentlemen are not the passive and unwitting recipients of promotions. Certainly they have earned their promotions.

Although it may not be universally applicable, it is inconceivable that not a single British civil servant seeks promotion. Perhaps the desire for promotion applies to a very small proportion of British civil servants, but if the ones it does apply to are influential in policy-making, then analysts must not dismiss rank maximization as a real and perhaps significant driving force. The question remains why interviewees seldom referred to rank as a factor in their decision-making. I refer to the collegial ethos of the British civil service. A social taboo in the British civil service militates against open expression of the desire for promotion. Possessing a large budget, however, seems to be something of a 'virility test'.

That brings me to an interesting finding. While testing whether civil servants do indeed wish to maximize their budgets, responsibilities and rank, I kept running across another interest set that civil servants seemed to be protecting: the procedures, habits, or traditions according to which civil servants conduct their affairs with one another. Scholars and civil servants often speak of the 'collegial' atmosphere (or the 'village') of Whitehall. Protecting that atmosphere when it is threatened seems to be an end in and of itself, independent of and perhaps additional to the desire for increased budgets, rank and responsibility. It would be interesting to test this notion further.

10.2d Preference-from-Position Function

Perhaps the most fundamental of Bureaucratic Politics' propositions is that bureaucrats' preferences are determined by their position in the bureaucracy. According to this thesis' reformulation of interests, the preference-from-position function asserts that bureaucrats will interpret a particular issue in terms of how it affects their budgets, responsibilities and rank and that their decisions or actions on that particular issue will be designed to maximize their budgets, responsibilities and rank. Evidence in support of this proposition is mixed. I can conclude, with a high degree of confidence, that from 1983 through 1985, civil servants took action in Esprit that was explicitly

designed to protect the budgets and responsibilities that the Alvey Programme afforded them. Interviewees attested to this and secondary sources, such as statistics and Government documents, back up the testimony.

From 1986 through 1987, European R&D programmes grew relative to national R&D programmes. Ministers sent signals that R&D priorities were going to shift -- that European R&D programmes would take precedence over national ones. Some civil servants realized that European R&D programmes were the only guaranteed future source of budgets and responsibilities. Ministerial objectives and bureaucrats' occupational concerns began to converge. Again, I can conclude with a high degree of certainty that civil servants maneuvered to bring European R&D issues into their remits, whether by gaining implementation responsibility or by designing decision-making structures and procedures through which they could exert influence, in order to maximize their budgets and responsibilities. This time, however, Ministers were sending clues as to where civil servants should look for budgets and responsibilities.

I did not find evidence that would allow me to state, with a high level of confidence, that civil servants made decisions and took action in Esprit from early 1988 to 1992 that was designed explicitly to further their occupational interests. Civil servants did not give up their desires for increased budgets and responsibilities and behaviour that was consistent with those desires was in evidence. However, I cannot attribute that behaviour entirely to the desire to maximize budgets and responsibilities. It seems that the preference-from-position function was overridden by another force that was affecting civil servants' behaviour: Ministers. Civil servants faithfully pursued the objectives established by their Ministers. That said, however, it is possible that civil servants were pursuing Minister's interests because that was the only way they could maximize their own budgets and responsibilities. On this score, I am stuck in the 'which come first, the chicken or the egg?' logic. Thus, of the ten years under observation, only in five years were the six criteria established in this thesis for attributing decisions or behaviour to bureaucratic competition met.

I must draw attention to several considerations. The first and most significant is that the Bureaucratic Politics perspective as formulated by Allison and Halperin and as refined in this thesis does not give the analyst the ability to state categorically that a bureaucrat's behaviour was the result entirely of a desire to maximize budgets, rank or responsibilities. The position-from-preference function has weaknesses. It does not allow the analyst to dismiss entirely the myriad of other possible factors (for example, personal ideology or individual idiosyncrasies) that may be affecting a bureaucrat's behaviour at the same time that occupational interests are influential. The perspective cannot isolate a single category of causal factors. What the perspective, as refined

here, can do is to suggest whether the preference-from-position function was having a significant effect on behaviour in a given circumstance.

The second consideration arises from the first. If the perspective does not let us rule out factors other than bureaucratic position that may determine behaviour, then we need to know the conditions under which bureaucratic position is likely to be determinate. The perspective, as postulated by Allison and Halperin, does not provide this facility.

10.2e Conditions

This thesis hypothesized that if competition among bureaucrats pursuing their occupational interests was to affect policy, it would be most likely to occur in the absence of: consistent Ministerial objectives, Ministerial control and supervision; and Whitehall machinery that effectively coordinated and controlled policy within and across departments. The evidence supports this hypothesis.

From 1983 through 1985, civil servants did not pursue the policies articulated by Ministers. Two factors account for the inability, or unwillingness, of civil servants to pursue their Minister's objectives. First, Ministerial objectives, particularly in the Department of Trade and Industry, as regards economic policy and European Community policy were inconsistent. The Conservative Party won the 1979 election with an economic ideology formulated in large part by Sir Keith Joseph: 'roll back the frontiers of the state'. Sir Keith became Secretary of State at the Department of Industry, but in the face of a severe recession, approved numerous industrial support measures that were contrary to Conservative economic policy. Sir Keith's successor acted in a similar manner.

Inconsistency characterized European policy as well. The Prime Minister was vociferous toward the Community and her approach to most Community issues had several common threads: limit expenditure, get money's worth for Britain, limit the size of the Brussels bureaucracy and ensure effective management. Her antipathy toward the Community and general objectives were not shared by all her Ministers. Cabinet was divided over European policy and, as a result, Government's approach toward the Community was schizophrenic. Mr Kenneth Baker exemplified this. Although he and the Prime Minister laid down a fairly consistent set of objectives toward Esprit, Mr Baker acted in a manner that was contradictory to those objectives.

Second, civil servants were free of Ministerial supervision and Whitehall control mechanisms, both of which are meant to ensure that civil servants pursue Ministers' objectives. Once Esprit I was approved, it received very little Ministerial attention, having been dismissed as a overly ambitious programme that would

suffocate in Brussels red tape. Whitehall control mechanisms were dysfunctional at the Departmental level and at the centre of Government. In the DTI, policy responsibility was fragmented and hierarchical reporting lines were severed. At the centre, the Cabinet Office was incapable of exerting influence in Esprit.

Lacking a consistent policy framework firmly enforced by Ministers or Whitehall mechanisms, civil servants responsible for Esprit responded to a more immediate and tangible pressure: bureaucratic competition. Their Department was in turmoil, having been reorganized numerous times in a very short period. Within this turbulent organizational environment, civil servants felt insecure and threatened. Competition among them was rampant.

Esprit was affected by, and contributed to that competition. Responsibility for Esprit fell to a bureaucratic anomaly: the Alvey Directorate. The Directorate was an autonomous, self-styled organization comprised of civil servants, industrialists and academics. Although ostensibly within the DTI, members of the Directorate did not obey the rules and procedures applicable to other civil servants. Further, members of the Directorate were keen to increase their responsibilities and protect their budgets. Some civil servants in the DTI proper looked upon the Directorate with a mixture of hostility and envy; some attempted to undermine it. Members of the Alvey Directorate took action in Esprit that was designed to protect the Alvey programme and the Directorate itself. Their actions were not designed to further Ministerial objectives.

The combination of defensive, reflexive decisions made by a small number of civil servants, industrialists and academics reacting to bureaucratic competition comprised a *de facto* British policy in Esprit. While scholars and practitioners have recognized the prevalence of bureaucratic competition in Whitehall, this was a case where that competition had a real effect on British policy in Esprit. It did so because Ministers did not pursue a consistent set of objectives, because Ministers did not maintain adequate control or supervision over civil servants responsible for Esprit and because DTI and Cabinet Office control mechanisms were ineffective.

From 1986 through 1987, civil servants witnessed a dramatic increase in Community funded R&D relative to nationally funded R&D. To the extent that bureaucrats seek budgets and responsibilities, only EC programmes afforded both. Civil servants who perceived the new importance of the EC maneuvered to bring EC R&D programmes, particularly Esprit, into their individual portfolios. Civil servants were not acting entirely on their own accord, however. Their new Secretary of State was sending signals that he intended to change the R&D orientation of the Department -- giving it a European orientation. Thus, while civil servants competed for budgets and responsibilities, their competition took place within parameters set by their Minister.

Although Esprit figured in civil servants' efforts to increase their budgets and responsibilities, they had very little influence over it during this period. They had been excluded from the policy-making process when Esprit moved up the political ladder. Mrs Thatcher and several Ministers took command over Esprit, usurping the decision-making license enjoyed by civil servants from 1983 through 1985. Thus, although bureaucratic competition over Esprit continued, Ministerial attention given to it from 1986 through 1987 prohibited the competition from having a real effect on British policy in Esprit.

By early 1988, Lord Young had established his authority in the Department and set down incontrovertible objectives toward national and European R&D. He provided civil servants with strong leadership and with clear and consistent objectives. He also refashioned the DTI's policy demarcation lines, hierarchy and control mechanisms to ensure that civil servants followed his lead.

Responsibility for Esprit was placed in a small project office whose only responsibility was to administer Esprit. The project office fell within a newly designed division which was firmly briefed into a much strengthened Departmental control and coordination mechanism centred on the Research Technology Policy division. RTP division was finally capable of enforcing Minister's R&D policy in all DTI divisions. Esprit was entirely subsumed within the larger policy framework set down by Ministers. While civil servants may have wished to increase their budgets and responsibilities, I could not identify action geared toward these ends and thus bureaucratic competition did not exert a real influence on British policy in Esprit.

This thesis began by juxtaposing two statements concerning British policy in Esprit. In 1983, that policy was expressed in the following terms: 'Esprit is complementary to the programme we propose [the Alvey Programme].'[13] By 1988, the statement had changed to: British IT research programmes were to be 'complementary to Esprit'.[14] Do these statements represent a change in British policy toward Esprit or were they the product of linguistic carelessness? Evidence presented here supports the conclusion that they did represent a change in British policy. That change resulted from the differential impact of bureaucratic competition during the ten year period under review. That impact was made different by two factors: the degree of Ministerial control and supervision and consistency of Ministerial objectives; and the efficiency of Whitehall control and coordination mechanisms.

---

[13] Department of Industry, 'A Programme for Advanced Information Technology: The Report of the Alvey Committee' (London: Department of Industry, 1982), p. 7.

[14] Department of Trade and Industry, 'DTI -- the Department for Enterprise', Cm 278 (London: HMSO, January 1988), p. 36.

While the evidence supported the hypothesis, four cautions are in order. First, it is unclear from my research whether bureaucratic competition affects policy in the absence of both Ministerial control and consistent objectives *and* effective Whitehall control and coordination mechanisms or whether the absence of one is sufficient. Second, due to the lack of methodological tools, I found it difficult to objectively assess the degree of Ministerial control or Whitehall efficiency. (The implications of this are discussed in the next section.)

Third, my suggestion that Whitehall control and coordination mechanisms prevented bureaucratic competition from having a real effect on policy implied that those mechanisms were somehow above or independent of bureaucratic politics. Some of the evidence presented here points to the opposite: that Whitehall mechanisms can, in fact, be the product of bureaucratic competition. Take, for instance, the case from late 1984 through 1985 when civil servants in the DTI's Research Technology Policy division and in the Treasury became concerned with the operations of the Alvey Directorate and devised procedures through which they could exert control over European R&D and Esprit in particular. (See Chapter 7.)

Fourth, this thesis argues that the evolution of British policy from one determined largely by bureaucratic competition to one consistent with Ministerial dictates is the result of two factors: Ministerial control, the articulation and compatibility of Ministerial objectives; and Whitehall control structures and procedures. A cause and effect relationship is posited: change in the these factors affected the behaviour of civil servants and policy itself. While the evidence gathered allows me to make this argument with a high degree of confidence, I must consider whether changes in bureaucrats' behaviour (and policy) were coincidental to, rather than caused by, changes in the factors mentioned above.

To test whether the evolution of policy and policy-making was coincidental to changes in the factors requires counter-factual argument. While not wishing to succumb to a tyranny of the 'ifs', it is useful to consider the following. If Lord Young had *not* established control in the DTI, had not developed and articulated a clear policy for making UK IT R&D programmes secondary to EC ones and had not designed organizational structures and procedures to enforce that policy, would civil servants have independently developed and pursued the very same (or even similar) policy? Is there some 'Euro-logic', so to speak, that draws civil servants toward Europe and, as a result, establishes British foreign policy? The amount of time civil servants from the Esprit Unit or from the Cabinet Office spend in Brussels and the sheer number of R&D issues with a European dimension encourages an affirmative answer. The evidence gathered during my course of research does not, however.

In an analysis of the effects of the EC on British foreign policy, David Allen points to the increase in contacts between civil servants and Ministers from the member states and the European Commission. He suggests that those contacts have led to a an 'expansion of Britain's external relations'[15] and to a '"Europeanization" of both the procedures and the substance of British foreign policy'.[16] For Allen, 'foreign policy' and 'external relations' are distinct notions: 'Foreign policy...has to be understood as an attempt to bring some order to this expanded set of foreign contacts -- an attempt in other words to design, manage and control Britain's external relations in order to try to achieve the objectives of foreign policy.'[17] Increased contact is not synonymous with foreign policy. Rather, foreign policy is the manner in which those contacts are organized and the purposes to which they work. Thus, contact between British civil servants involved in Esprit and other member states' civil servants and European Commissioners should be seen an 'expansion of Britain's external relations' rather than a foreign policy *per se*.

Lord Young set British *policy* in Esprit and accompanied that policy with actions that forced civil servants to pursue it. He slashed the DTI's budget for national IT R&D programmes and approved a large DTI budgetary appropriation for Esprit II. These decisions harnessed civil servants' desires for budgets and responsibilities to the advancement of Ministerial objectives. Civil servants turned to that which afforded them budgets and responsibilities and in so doing advanced their Minister's policy objectives. I believe that if Lord Young had approved a the national programme proposed by the IT86 Committee to operate alongside Esprit II, civil servants in the DTI would have responded in much the same way that members of the Alvey Directorate did: they would have acted to protect the budgets and responsibilities that would accrue to them through the national programme they themselves had designed. The reason: the national programme designed by the IT86 Committee afforded far greater spending authority and responsibility to civil servants in the DTI than did Esprit. Although it was important, the role for British civil servants in Esprit was basically limited to that of a match-maker and post box for decisions that were made in Brussels either in the EMC forum, in which the UK was one among twelve voices, or by European Commissioners in conjunction with the ESC and EAB. In contrast, British civil servants implementing a national programme, had it been approved in the form suggested by the IT86 Committee, would have had powers that ranged from designing projects to allocating funds.

---

[15] David Allen, 'Britain and Western Europe' in Michael Smith, Steve Smith and Brian White (eds.), *British Foreign Policy: Tradition, Change & Transformation* (London: Unwin Hyman, 1988), p. 184.
[16] *Ibid.*, p. 191.
[17] *Ibid.*, p. 184.

10.3 Future Research

Although the Bureaucratic Politics perspective proved of mixed success in this study, I believe that its fundamental insights are robust and worthy of continued attention. Further research should be carried out as regards both the reformulations undertaken here and the basics of the perspective proposed by Allison and Halperin.

In order to increase the parsimony of the perspective, this thesis used a single category of bureaucratic interests: occupational interests. This does not suggest or imply that occupational interests are the only interests bureaucrats possess. Bureaucrats may seek any number of interests (for example, autonomy, the 'good life', pecuniary benefits, interesting work, to impart their values) at different times and in different combinations. Ideally, the analyst should be able to isolate a particular interest from all others and analyze its effects holding other things constant. But this is the world of the economist. Perhaps scholars of international relations must be satisfied with having the ability to state, with a high degree of confidence, that a particular interest was dominant over all others at a particular point in time.

Today, we make subjective evaluations in this regard. Is there not some tool, perhaps a criteria, that could be developed that would allow analysts to make objective evaluations regarding the impact of a particular interest on the behaviour of bureaucrats? It would also be useful if the conditions under which a bureaucrat is likely to respond to a particular interest could be identified. Are there certain social structures, decision-making structures or procedures or emotional conditions within a governmental organization that raise the importance of occupational interests, for example, over all others in the minds of bureaucrats?

The preference-from-position function is elemental to the Bureaucratic Politics perspective. It is also one of its most significant weaknesses. The perspective as formulated by Allison and Halperin suggests that bureaucrats interpret a particular issue in light of how it affects their interests, which are determined by their position in the bureaucracy, and they take action on that issue that is designed to further their interests, which include maximizing budgets, responsibilities and rank. A statement of the preference-from-position function truer to human behaviour would be qualified: bureaucrats may interpret a particular issue in light of how it affects their interests and they may take action on that issue to further their interests. So long as conditions exist where bureaucrats act without reference to their occupational interests (for example, the bureaucrat perceived no relationship between the issue and his or her interests) or even against them, analysts need objective criteria according to which they can evaluate and test behaviour before attributing it to the preference-from-position function. Further, because bureaucrats do not necessarily act in a manner consistent

with their interests, there is a need to establish conditions under which bureaucrats are most likely to behave according to the preference-from-position function.

This thesis concludes that bureaucratic competition can affect British policy in the absence of Ministerial control and supervision, clearly articulated consistent Ministerial objectives and in the absence of effective Whitehall control and coordination mechanisms. Further research on both conditions is needed. First, it would be helpful if analysts had an objective measure for deciding whether the Whitehall machinery is operating 'effectively'. In developing such a measure, research could focus on the workings of intra- and inter-departmental committees and on the functioning of the Cabinet Office. Relationships among civil servants that are established by these committees and through the auspices of the Cabinet Office should be examined.

While the need for objective criteria is obvious and although possible starting points in the development of such criteria can be identified, their development nevertheless poses difficult conceptual questions, perhaps the most significant being, 'From where do we derive those measures?'. Can we pin-point a time in the history when the machinery of British Government was working perfectly? Is there an ideal against which we can judge the current situation? Perhaps we could measure efficiency in terms of whether objectives were met. This may be a fruitful avenue for some case studies, but it is of little use here -- the reason being that Ministerial objectives as regards Esprit changed with great frequency. We cannot measure efficiency in terms of hitting a target when the target is constantly moving. Perhaps we could measure efficiency in terms of how well a government maintains consistency or coherence of action in the face of frequently changing objectives. This avenue leads to circular reasoning: we would have to define 'consistency' and 'coherence' before we could define 'efficiency'. Given the conceptual difficulty of creating objective measures, subjective judgments of 'efficiency', if they are made with integrity, must suffice.[18]

Second, what exactly constitutes Ministerial control? Is there some minimal level of authority below which bureaucratic competition begins to affect policy? How do Ministers establish control? Political scientists in the US are developing a framework, labelled the 'principal-agent' model of bureaucratic relationships, that may be useful.[19] The model suggests that central political institutions (principals) bound

---

[18] I am grateful to Professor James Mayall for help with this issue.

[19] See for example, Nathaniel Beck, 'Presidential Influence on the Federal Reserve in the 1970s', *American Political Science Review* (Vol. 26, 1982), pp. 415-45; Terry M. Moe, 'Regulatory Performance and Presidential Administration', *American Journal of Political Science* (Vol. 26, 1982), pp. 197-224; Terry M. Moe, 'The New Economics of Organization', *American Journal of Political Science* (Vol. 28, 1984), pp. 739-777; Barry R. Weingast and Mark J. Moran, 'Bureaucratic Discretion or Congressional Control: Regulatory Policymaking by the Federal Trade Commission',

and mold the preferences of bureaucrats (agents). Their ability to do so depends on three factors: the presence and use of tools of political control, the resources and receptivity of bureaucrats to control and relationships that affect the principal-agent responses. Among the tools of political control are the ability to make appointments, manipulate personnel, control organizational structure, provide resources, exercise direct authority and employ oversight mechanisms.[20] Research exploring whether British Ministers employ these as control mechanisms would be valuable as would research on control mechanisms that are unique to Britain, such as ones employed by the Departmental Permanent Secretaries, the Secretary of State's private office, Parliament, the Public Accounts Committee, the National Audit Office and the Cabinet.

10.4 The Final Judgment

Steve Smith suggested that,

> ...in many ways the single most important task that a study of British foreign policy could perform for FPA would be to investigate the phenomena of bureaucratic and organisational politics at a variety of levels within government over a variety of policy issue-areas. As it stands, we simply do not know the extent to which they operate in the British case. We know the arguments for and against in the case of the United States (and even in the Soviet one!) but we, as FPA theorists, do not know the caveats that must be applied to the findings that come from over the Atlantic.[21]

In answer, this thesis concludes the following. Bureaucrats involved with Esprit sought to maximize their budgets and responsibilities. Bureaucratic competition does exist in Whitehall and that competition can affect policy under the conditions hypothesized. Finally, the Bureaucratic Politics perspective, in amended form, is useful in explaining British foreign policy.

One must question, however, whether Esprit was a unique issue area that encouraged behaviour among bureaucrats that is not evidenced in other policy issues and whether the unusual number of Ministerial reshuffles at the Department of Trade

---

Journal of Political Economy (Vol. 91, 1983), pp. 765-800; John T. Scholtz and Feng-heng Wei, 'Regulatory Enforcement in a Federalist System', *American Political Science Review* (Vol. 80, 1986), pp. 1249-1270; B. Dan Wood, 'Principals, Bureaucrats, and Responsiveness in Clean Air Enforcements', *American Political Science Review* (Vol. 82, No. 1, March 1988), pp. 213-234; and B. Dan Wood and Richard W. Waterman, 'The Dynamics of Poiltical Control of the Bureaucracy', *American Political Science Review* (Vol. 85, No. 3, September 1991), pp. 801-828.

[20] Wood, 'Principals, Bureaucrats and Responsiveness', *ibid.*, p. 213-215.

[21] Steve Smith, 'Foreign policy analysis and the study of British foreign policy' in Lawrence Freedman and Michael Clarke, *Britain in the World* (Cambridge: Cambridge University Press, 1991), p. 68.

and Industry created an organizational environment so conducive to bureaucratic competition that it is atypical of Whitehall. If either of these is found to be the case, then the general applicability of the Bureaucratic Politics perspective and the reformulations presented here seems limited. If, however, fundamental divisions within the Conservative Party over Europe or Mrs Thatcher's leadership style or perhaps even the Conservative Party's economic philosophy encouraged bureaucratic competition, further research into the effects on bureaucratic competition in other policy arenas is warranted.

I am inclined to argue that Esprit was not as unique as it might first appear. From a survey of news, I would expect a Bureaucratic Politics approach to shed light on, for example, the Matrix Churchill case where British businessmen were accused of selling sensitive equipment to Iraq before and during the Gulf War. In the Scott inquiry following the affair, civil servants were implicated in the Government's defence and the uncertainty of Ministerial objectives was clear.[22]

Further research might also explore the nature of civil servant-Minister relationships under Mr Major -- a relationship which, as this thesis has shown, is a vital factor affecting whether bureaucratic competition can have a real affect on policy. Mr Major has undertaken quite a radical reform of the British civil service through the market-testing programme, where the efficiency of the civil service is tested, and contracting-out, whereby many functions previously performed by the civil service are contracted-out to the private sector. Numerous top-level civil servants have commented on the effects the market-testing programme is having on the civil service, using such terms as 'adversarial', 'alienating', 'damaging effect on morale', 'crisis', 'hopelessly awry'.[23] The Public Accounts Committee warned that Mr Major's contracting-out policy threatens the 'time-honoured values of integrity, impartiality and incorruptibility' of the British civil service.[24] Sir Peter Kemp, former Permanent Secretary at the Office of Public Service and Science, declared that Whitehall is being led by "'wayward barons"' pulling in different directions. As a result, the Civil Service is unhappy, unsure of itself and becoming "littered with policies that do not work"'.[25] Those 'wayward barons', are 'all doing their own thing and reporting to different people ... there is no single person who pulls them together'.[26] The similarity between the civil service environment described here and during the early years of Esprit seems to be great.

---

[22] See for example, *Independent*, 18 January 1994 and 22 January 1994.
[23] *Independent*, 15 November 1993, p. 1, 16 November 1993 and 25 November 1993, p. 33.
[24] *Independent*, 28 January 1994, p. 1 and p. 15; *Economist*, 19 March 1994, p. 16 and pp. 39-41.
[25] *Independent*, 15 November 1993, p. 1.
[26] *Ibid.*

Finally, further research could apply the Bureaucratic Politics perspective as reformulated here to a study of German and French IT R&D policy. Both governments implemented large national IT R&D programmes, run by civil servants, simultaneous with Esprit. Although my research on French and German IT R&D policy is cursory, I would not be surprised to find much of the same behaviour occurring in those governments as occurred in the UK from 1983 through 1985.

This study employed an amended version of the Bureaucratic Politics perspective and found that bureaucratic competition can have a real effect on British foreign policy-making under certain conditions. In reaching these conclusions, I found the Bureaucratic Politics perspective as amended a useful analytical tool for exploring an important element of the policy-process. I did not, however, find its explanatory power equally as impressive. The perspective proved useful in explaining policy during only one-third of the period under observation. In the remaining two-thirds, it facilitated a study of the intra-governmental policy-making process, but it did not offer an explanation of policy. The literature falling under Allison's 'Rational Actor Model' would probably have proved the most useful tool for analyzing policy during the last one-third if not the last two-thirds of the decade. A 'Rational Actor Model' approach would not, however, have been able to explain British policy in Esprit from 1983 through 1985.

10.5 The Judgment in Clive Ponting's Trial

In Mr Ponting's trial, Mr Justice McCowan accused Mr Ponting of acting in his own interest rather than in the interests of his Ministers, the latter being synonymous with the national interest. Mr Ponting's defence was that he was acting in the national interest, which was, in this case, different from the interests of his Ministers. Mr Ponting was acquitted.

In 1986 he wrote a book, entitled *Whitehall: Tragedy and Farce*, in which he explained how Government policy is made. His words will end this thesis.

> Some conflicts can be extraordinarily complex as several different departments try to promote their differing interests. For example, defence of the North Sea oil and gas fields and fishery protection is provided by the Navy and RAF but partly paid for by other departments. The Navy and RAF see this as a convenient way of maintaining more ships and aircraft but as usual everything they do is very expensive. The Scottish Office run their own Fishery Protection Fleet, MAFF are keen to do the same because it would be cheaper and increase their independence. Energy are worried that if MAFF pull out they will have to pay a bigger bill to defend the oil fields. The Welsh Office and Northern Ireland Office also have to pay their share of the costs. And at the end of all this confusion a new government policy emerges. It emerges not after careful

assessment of the national interest but after a balancing of various Whitehall interests.[27]

[27] Ponting, *op. cit.*, in note 4, p. 103.

Bibliography

With the exception of newspaper and several journal articles, this is an alphabetical list, by author, of all works cited in this thesis. The names of newspaper and journal sources are listed at the end of the bibliography.

Advisory Council for Applied Research and Development. *Information Technology* (London: HMSO, September 1980).

Allen, David and Byrne, Paul. 'Multilateral Decision-Making and Implementation: the Case of the European Community' in Steve Smith and Michael Clarke (eds.), *Foreign Policy Implementation* (London: George Allen & Unwin, 1985).

Allen, David. 'Britain and Western Europe' in Michael Smith, Steve Smith and Brian White (eds.). *British Foreign Policy: Tradition, Change & Transformation* (London: Unwin Hyman, 1988).

Allison, Graham T. *Essence of Decision: Explaining the Cuban Missile Crisis* (Boston, MA: Little, Brown, 1971).

Allison, Graham and Halperin, Morton. 'Bureaucratic Politics: A Paradigm and Some Policy Implications' in Raymond Tanter and Richard Ullman, *Theory and Policy in International Relations* (Princeton, NJ: Princeton University Press,1972).

Armstrong, Robert. *Note of Guidance on the Duties and Responsibilities of Civil Servants in Relation to Ministers.* Reproduced as memorandum submitted by the Cabinet Office to the Treasury and Civil Service Committee, Session 1985-86, HC 92-II (London: HMSO, 1986).

Arnold, Erik and Guy, Ken. *Parallel Convergence: National Strategies in Information Technology* (London: Frances Pinter, 1986).

Arnold, Erik. *A Review of the Intelligent Knowledge Based Systems (IKBS) Programme,* Report to the Information Engineering Directorate, Department of Trade and Industry (Brighton: Science Policy Research Unit, 1988).

Arnold, Erik and Guy, Ken. 'Policy Options for Promoting Growth Through Information Technology' in OECD, *Information Technology and New Growth Opportunities* (Paris: OECD, 1989).

Art, R.J.'Bureaucratic Politics and American Foreign Policy', *Policy Sciences* (Vol. 4, 1983), pp. 467-490.

Baker, Kenneth. *The Turbulent Years: My Life in Politics* (London: Faber and Faber, 1993).

Baker, Kenneth. Keynote Address to Barbican Conference, IT82, reprinted in *Information Technology and Public Policy* (Vol. 1, No. 2, 1983).

Barber, John. *Who Makes British Foreign Policy?* (Milton Keynes: Open University Press, 1976).

Beck, Nathaniel. 'Presidential Influence on the Federal Reserve in the 1970s', *American Political Science Review* (Vol. 26, 1982), pp. 415-45.

Benn, Anthony. *Arguments for Democracy.* Chris Mullen (ed.), (London: Cape 1981).

Boardman, Robert and Groom, A.J.R. (eds.). *The Management of Britain's External Relations* (London: Macmillan, 1973).

Bobrow, Davis B. *International Relations: New Approaches* (New York: Free Press, 1972).

Cabinet Office. *Annual Review of Government Funded R&D* (London: HMSO, 1987).

Cabinet Office. *Annual Review of Government Funded R&D* (London: HMSO, 1988).

Caldwell, Dan. 'A Research Note on the Quarantine of Cuba', *International Studies Quarterly* (Vol. 22, No. 4, 1978), pp. 625-33.

Caldwell, Dan. 'Bureaucratic Foreign Policy-making', *American Behavioural Scientist* (Vol. 21, No. 1, 1977), pp. 87-110.

Carr, E.H. *The Twenty Year's Crisis, 1919-1939: An Introduction to the Study of International Relations*, Second Edition (London: Macmillan, 1946).

Carrington, Peter. *Reflect on Things Past: The Memoires of Lord Carrington* (London: Collins, 1988).

Civil Research and Development, Government response to the First Report of the House of Lords Select Committee on Science and Technology, Session 1986-87, Cm 185 (London: HMSO, July 1987).

Civil Service Yearbook (London: HMSO, 1988).

Civil Service Yearbook (London: HMSO, 1989).

Civil Service Yearbook (London: HMSO, 1993).

Clarke, Alan. *Diaries* (London: Weidenfeld & Nicholson, 1993).

Clarke, Michael and Smith, Steve. 'Perspectives on the Foreign Policy System: Implementation Appraoches' in Michael Clarke and Brian White (eds.). *Understanding Foreign Policy: The Foreign Policy Systems Approach* (Aldershot: Edward Elgar, 1989).

Clarke, Michael. *British External Policy-Making in the 1990s* (Houndmills: Macmillan, 1992).

Clarke, Peter. 'Margaret Thatcher's Leadership in Historical Perspective', *Parliamentary Affairs* (Vol. 45, No. 1, January 1992).

Coker, Christopher. *Nation in Retreat?* (Oxford: Pergamon, 1986).

Commission of the European Communities. 'Towards a European Strategic Programme for Research and Development in Information Technologies'. Com (82) 287 final (Brussels: Commission of the European Communities, 25 May 1982).

Commission of the European Communities. 'On Laying the Foundations for a European Strategic Programme of Research and Development in Information Technology: the Pilot Phase'. Com (82) 486 final/2 (Brussels: Commission of the European Communities, 13 August 1982).

Commission of the European Communities. 'Proposal for a Council Decision Adopting the First European Strategic Programme for Research and Development in Information Technologies (Esprit)'. Com (83) 258 final (Brussels: *Official Journal of the European Communities*, C 321, 26 November 1983).

Commission of the European Communities. 'Concerning a Review to Assess the Initial Results of the Programme ESPRIT'. Com (85) 616 final (Brussels: Commission of the European Communities, 19 November 1985).

Commission of the European Communities. 'Communication from the Commission to the Council: The Second Phase of ESPRIT'. Com (86) 269 final (Brussels: Commission of the European Communities, 21 May 1986).

Commission of the European Communities. 'Esprit: the First Phase Progress and Results'. Com (86) 687 final (Brussels: Commission of the European Communities, 8 December 1986).

Commission of the European Communities. 'Proposal for a Council Regulation Concerning the European Strategic Programme for Research and Development in Information Technologies (ESPRIT)'. Com (87) 313 final (Brussels: Commission of the European Communities, July 1987).

Commission of the European Communities. 'ESPRIT: 1987 Information Package', 15 December 1987, Annex I.

Commission of the European Communities. 'Proposal for a Council Decision Concerning the Framework Programme of Community Activities in the Field of Research and Technological Development (1990 to 1994)'. Com (89) 397 final (Brussels: O*fficial Journal of the European Communities*, C 243, 23 September 1989).

Commission of the European Communities. 'Call for Proposals for the Specific Programme of Research and Technological Development in the Field of Information Technology'. 91/C 198/09 (Brussels: *Official Journal of the European Communities*, C 198, 27 July 1991).

Commission of the European Communities. 'The European Electronics and Information Technology Industry: State of Play, Issues at Stake and Proposals for Action'. SEC (91) 565 final (Brussels: Commission of the European Community, 3 April 1991).

Committee of Public Accounts. 'The Alvey Programme for Advanced Information Technology', Fifty-First Report, Session 1987-88, HC 477.

Coombes, David. *Politics and Bureaucracy in the European Community* (London: Allen & Unwin, 1970).

Cornford, J.P. 'The Illusion of Decision', *British Journal of Political Science* (Vol. 4, Part 2, 1974), pp. 231-243.

Council Decision of 11 April 1988 Concerning the European Strategic Programme of Research and Development in Information Technologies (Esprit). 8/279/EEC (Brussels: *Official Journal of the European Communities*, L 118, 6 May 1988).

Council Decision Adopting a Community Programme in the Field of Strategic Analysis, Forecasting and Evaluation in Matters of Research and Technology (Monitor). 89/414/EEC (Brussels: *Official Journal of the European Communities*, L 200, 13 July 1989).

Council Decision of 23 April 1990 Concerning the Framework Programme of Community Activities in the Field of Research and Technological Development (1990 to 1994). 90/221/Euratom, EEC (Brussels: *Official Journal of the European Communities*, L 117, 8 May 1990).

Council Decision of 8 July 1991 Adopting a Specific Research and Technological Development Programme in the Field of Information Technologies (1990 to 1994). 91/394/EEC (Brussels: *Official Journal of the European Communities*, L 218, 6 August 1991).

Cyert, Richard M. and March, James G. 'A Behavioral Theory of Organizational Objectives' in Mason Haire (ed.). *Modern Organization Theory* (New York: Wiley, 1959).

Dahl, Robert A. *A Preface to Democratic Theory* (Chicago, IL: University of Chicago Press, 1956).

Dasgupta, Partha and Stoneman, Paul (eds.). *Economic Policy and Technological Performance* (Cambridge: Cambridge University Press, 1987).

Dawisha, Karen. 'The Limits of the Bureaucratic Politics Model: Observations on the Soviet Case', *Studies in Comparative Communism* (Vol. 13, No. 3, 1980), pp. 300-46.

Department of Industry, *Government Response to the ACARD Report on Information Technology* (London: Department of Industry, September 1981).

Department of Industry, 'A Programme for Advanced Information Technology: The Report of the Alvey Committee' (London: Department of Industry, 1982).

Department of Trade and Industry, *Strategic Aims* (London: DTI, 1983).

Department of Trade and Industry, *Science and Technology Report 1984-85* (London: DTI, 1985).

Department of Trade and Industry, 'DTI -- the Department for Enterprise', Cm 278 (London: HMSO, January 1988).

Department of Trade and Industry, Information Engineering Directorate. 'Silicon 2000. Devices: A National Research Programme in Silicon VLSI and CAD' (London: DTI, June 1988).

Department of Trade and Industry, Information Engineering Directorate. 'Systems Architecture. A Strategy for Research in Parallel Architecture, Distributed Systems, Vision and Speech Technologies' (London: DTI, June 1988).

Department of Trade and Industry, Information Engineering Directorate. 'Systems Engineering. Improved Design and Construction of Complex IT Systems' (London: DTI, June 1988).

Department of Trade and Industry, departmental mimeo, 'DTI/SERC IT Advisory Committee Structure', February 1989.

Destler, I.M. *Presidents, Bureaucrats and Foreign Policy* (Princeton, NJ: Princeton University Press, 1972).

Downs, Anthony. *Inside Bureaucracy* (Boston, MA: Little, Brown, 1967).

Drewry, Gavin and Butcher, Tony. *The Civil Service Today*, Second Edition (Oxford: Basil Blackwell, 1991).

Dunleavy, Patrick. 'The Architecture of the British Central State, Part I: Framework for Analysis', *Public Administration* (Vol. 67, Autumn 1989).

Dunleavy, Patrick. 'The Architecture of the British Central State, Part II: Empirical Findings', *Public Administration* (Vol. 67, Winter 1989).

Dunleavy, Patrick. *Democracy, Bureaucracy and Public Choice* (London: Harvester, 1991).

El-Agraa, Ali M. *The Economics of the European Community*, Fourth Edition (London: Harvester Wheatsheaf, 1994).

'Europe -- The Future', *Journal of Common Market Studies* (Vol. 23, 1984), pp. 74-81.

Findlay, Geoffrey. 'International Collaboration' in Robine Nicholson, *et. al.* (eds.), *Science and Technology in the United Kingdom* (Harlow: Longman, 1991).

Forecasting and Assessment in Science and Technology, The FAST report of 1982, reprinted as *Eurofutures: the Challenges of Innovation*, The FAST Report (London: Butterworths, 1984).

Foreman, Susan. *Shoes and Ships and Sealing Wax* (London: HMSO, 1986).

Frankel, Joseph. *National Interest* (London: Pall Mall Press, 1970).

Freedman, Lawrence. 'Logic, Politics and Foreign Policy Processes: A Critique of the Bureaucratic Politics Model', *International Affairs* (Vol. 52, No. 3, July 1976), p. 434-48.

Fry, G.K. *The Administrative 'Revolution' in Whitehall* (London: Croom Helm, 1981).

Furniss, Edgar S. and Snyder, Richard C. *An Introduction to American Foreign Policy* (New York: Rinehart, 1955).

Gallucci, Robert L. *Neither Peace Nor Honor* (Baltimore, MD: Johns Hopkins University Press, 1975).

Gamble, Andrew. *The Free Economy and the Strong State* (Houndmills: Macmillan, 1988).

George, Stephen. *An Awkward Partner: Britain in the European Community* (Oxford: Oxford University Press, 1990).

Georghiou, Luke, *et. al. Evaluation of the Alvey Programme: Interim Report* (London: HMSO, 1987).

Georghiou, Luke and Davis, Eric (eds.), *Evaluation of R&D: A Policymaker's Perspective*, Proceedings of the International Workshop on Assessment and Evaluation, 17-18 November 1988 (London: HMSO, 1988).

Georghiou, Luke, *et. al., The Impact of European Community Policies for Research and Technological Development Upon Science and Technology in the United Kingdom* (London: HMSO, 1992).

Gilpin, Robert. *War and Change in World Politics* (Cambridge: Cambridge University Press, 1981).

Government Financing of Research and Development, 1974-1984 (Luxembourg: Eurostat, 1985).

Government and Science: Government Observations on the First Report of the House of Lords Select Committee on Science and Technology, Session 1981-82, Cm 8591 (London: HMSO, July 1982).

Gummett, Philip. *Scientists in Whitehall* (Manchester: Manchester University Press, 1980).

Gummett, Philip. ' History, Development and Organization of UK Science and Technology up to 1982' in Robin Nicholson, *et. al.* (eds.). *Science and Technology in the United Kingdom* (Harlow: Longman, 1991).

Gummett, Philip. 'The Evolution of Science and Technology Policy: A UK Perspective', *Science and Public Policy* (Vol. 18, No. 1, February 1991), pp. 31-37.

Guy, Ken. *UK Policies and Programmes in Electronics and Information Technology: A Report to the Alvey Directorate* (Brighton: Science Policy Research Unit, University of Sussex, 1986).

Guy, Ken, *et. al. Evaluation of the Alvey Programme for Advanced Information Technology* (London: HMSO, 1991).

Guy, Ken. 'Strategies for the Future: Recent Developments in UK Technology Policy Affecting the IT Sector', paper prepared for a Seminar of the Network of Public Policy Correspondents, sponsored by DGXIII, held in Brussels on 26 January 1993.

Haas, Ernst B. *The Uniting of Europe: Political, Social and Economic Forces, 1950-1957* (London: Stevens & Sons, 1958).

Halperin, Morton. 'Why Bureaucrats Play Games', *Foreign Policy* (No. 2, Spring 1971), pp. 74-88.

Halperin, Morton. *Bureaucratic Politics and Foreign Policy* (Washington, DC: Brookings Institute, 1974).

Hare, Paul, *et. al. An Assessment of Esprit in the UK* (London: HMSO, 1989).

Heady, Bruce. *British Cabinet Ministers* (London: Allen and Unwin, 1974).

Hennessy, Peter. *Cabinet* (Oxford: Basil Blackwell, 1986).

Hennessy, Peter. *Whitehall* (London: Fontana Press, 1990).

Herman, Ros. *The European Scientific Community* (Harlow: Longman, 1986).

Hermann, Charles F., *et. al.* (eds.). *New Directions in the Study of Foreign Policy* (London: Harper Collins, 1987).

Hill, Christopher. 'Theories of Foreign Policy-Making for Developing Countries' in Christopher Clapham (ed.). *Foreign Policy Making in Developing States* (Farnborough: Saxon House, 1978).

Hill, Christopher. 'A Theoretical Introduction' in William Wallace and William E. Paterson (eds.). *Foreign Policy Making in Western Europe: A Comparative Approach* (Farnborough: Saxon House, 1978).

Hill, Christopher and Light, Margot. 'Foreign Policy Analysis' in Margot Light and A.J.R. Groom (eds.). *International Relations: A Handbook of Current Theory* (London: Pinter, 1985).

Hills, Jill. *Information Technology and Industrial Policy* (Beckenham: Croom Helm, 1984).

Hilsman, Roger. 'The Foreign-Policy Consensus: An Interim Research Report', *Journal of Conflict Resolution* (Vol. 3, No. 4, 1959), pp. 361-81.

Hilsman, Roger. *To Move a Nation* (New York: Doubleday, 1967).

Hitiris, Theo. *European Community Economics*, Third Edition (London: Harvester Wheatsheaf, 1994).

Hogwood, Brian W. 'The Rise and Fall and Rise of the Department of Trade and Industry' in Colin Campbell and B. Guy Peters (eds.). *Organizing Governance, Governing Organizations* (Pittsburgh, PN: University of Pittsburgh Press, 1988).

Hollis, Martin and Smith, Steve. 'Roles and Reasons in Foreign Policy Decision-making', *British Journal of Political Science* (Vol. 16, No. 3, 1986), pp. 269-86.

Hood, Christopher C. *The Limits of Administration* (London: John Wiley & Sons, 1976).

Horelick, Arnold Lawrence, *et. al. The Study of Soviet Foreign Policy: Decision-Theory-Related Approaches* (Beverely Hills, CA: Sage, 1975).

House of Commons Education, Science and Arts Committee, Minutes of Evidence Taken on Information Technology, HC 107i, 14 December 1981.

House of Commons Expenditure Committee, *The Civil Service*, Eleventh Report, Session 1976-77, HC 535-II (London: HMSO, July 1977).

House of Commons Trade and Industry Committee, *Information Technology*, First Report, Session 1988-89, Vol. I and II (London: HMSO, 1988).

House of Lords Select Committee on the European Communities, *ESPRIT*, 8th Report, Session 1984-85 (London: HMSO, 1985).

House of Lords Select Committee on the European Communities, *A Community Framework for R&D*, 17th Report, Session 1989-90 (London: HMSO, 1990).

House of Lords Select Committee on Science and Technology, *Science and Government*, First Report, Session 1981-82, HL20-I and HL20-II (London: HMSO, 1982).

House of Lords Select Commitee on Science and Technology, *Civil Research and Development*, First Report, Session 1986-87, HL20-I and HL20-II (London: HMSO, 1987).

House of Lords Select Committee on Science and Technology, *International Scientific Programmes*, Second Report, Session 1990-1991, HL 24-I and 24-II (London: HMSO, February 1991).

Howard, Anthony (ed.). *The Crossman Diaries* (London: Mandarin, 1991).

Huntington, Samuel P. *The Common Defense* (New York: Columbia University Press, 1961).

'Information Technology -- A Plan for Concerted Action', Report of the IT86 Committee (London: HMSO, 1986).

Jennings, Ivor. *The Law and the Constitution*, Fifth Edition (London: University of London Press, 1959).

Johnson, Christopher. *The Economy Under Mrs Thatcher, 1979-1990* (Houndmills: Penguin, 1991).

Jones, George W. 'Cabinet Government and Mrs Thatcher', *Contemporary Record* (Vol. 1, No. 3, 1987).

Kakabadse, Mario Alexis. *The Negotiating Role of the Commission of the European Community in the GATT Tokyo Round 1973-79.* PhD thesis, London School of Economics and Political Science, 1981.

Kavanagh, Dennis. *Thatcherism and British Politics* (Oxford: Oxford University Press, 1990).

Kay, Neil. 'Industrial Collaborative Activity and the Completion of the Internal Market', *Journal of Common Market Studies* (Vol. 29, No. 4, June 1991), pp. 347-62.

Keliher, Leo. *Policy-Making in Information Technology: a Decisional Analysis of the Alvey Programme.* PhD thesis, London School of Economics and Political Science, 1987.

Keohane, Robert and Nye, Joseph. *Transnational Relations and World Politics* (Cambridge, MA: Harvard University Press, 1970).

Kinder, Donald R. and Weiss, Janet A. 'In Lieu of Rationality: Psychological Perspectives on Foreign Policy Decision-Making', *Journal of Conflict Resolution* (Vol. 22, No. 4, 1978), pp. 707-35.

Krasner, Stephen. 'Are Bureaucracies Important? (or Allison Wonderland)', *Foreign Policy* (Vol. 7, 1972), pp. 159-79.

Krasner, Stephen D. *Defending the National Interest: Raw Materials Investments and U.S. Foreign Policy* (Princeton, NJ: Princeton University Press, 1978).

Lawson, Nigel. *The View From No. 11: Memoirs of a Tory Radical* (London: Corgi Books, 1993).

Lewis, David and Wallace, Helen (eds.). *Policies into Practice* (London: Heinemann, 1984).

Lilley, Peter. 'Innovation: Competition and Culture', Speech by Rt Hon Peter Lilley, MP, Secretary of State for Trade and Industry at the University of Warwick, 21 May 1991.

Lindblom, Charles E. 'The Science of Muddling Through', *Public Administration Review* (Vol. 29, No. 2, Spring 1959), pp. 79-88.

March, James and Simon, Herbert. *Organizations*, Second Edition (Oxford: Blackwell, 1993).

Marshall, George. *Constitutional Conventions* (Oxford: Clarendon Press, 1984).

Michelmann, Hans J. *Organizational Effectiveness in a Multinational Bureaucracy* (Farnborough: Saxon House, 1977).

Middlemas, Keith. *Power, Competition and the State*, Volume 3 (Houndmills: Macmillan, 1991).

Migdal, Joel S. 'International Structure and External Behaviour', *International Relations*, (Vol. 15, May 1973), pp. 510-26.

Modelski, George A. *A Theory of Foreign Policy* (New York: Praeger, 1962).

Moe, Terry M. 'Regulatory Performance and Presidential Administration', *American Journal of Political Science* (Vol. 26, 1982), pp. 197-224.

Moe, Terry M. 'The New Economics of Organization', *American Journal of Political Science* (Vol. 28, 1984), pp. 739-77.

Morgenthau, Hans J. *In Defense of the National Interest: A Critical Examination of American Foreign Policy* (New York: Knopf, 1951).

Morgenthau, Hans J. *Politics Among Nations: The Struggle for Power and Peace*, Sixth Edition (New York: Knopf, 1985).

Muller, Joachim W. *European Collaboration in Advanced Technology* (Amsterdam: Elsevier, 1990).

Nairne, Patrick. 'The Civil Service: "Mandarins and Ministers"' (Wroxton College, Wroxton Papers in Politics, 1990).

National Audit Office, Report by the Comptroller and Auditor General, 'Department of Trade and Industry: The Alvey Programme for Advanced Information Technology', HC 402 (London: HMSO, 24 March 1988).

National Economic Development Council, memorandum by the Director General, *Industrial Policy in the UK* (NEDC (82) 25, April 1982.

National Economic Development Council, Electronics EDC. *Policy for the UK Electronics Industry* (London: NEDC, 1982).

National Economic Development Council, Information Technology EDC. *Policy for the UK Information Technology Industry* (London: NEDC, 1983).

National Economic Development Council, Information Technology EDC. *Crisis Facing Information Technology*, August 1984.

Neustadt, Richard. *Presidential Power: The Politics of Leadership* (New York: Wiley, 1960).

Nicholson, Robin, *et. al. Science and Technology in the United Kingdom* (Harlow: Longman, 1991).

Niskanen, William. *Bureaucracy and Representative Government* (New York: Aldine-Atherton, 1971).

Niskanen, William. *Bureaucracy: Servant or Master?* (London: Institute for Economic Affairs, 1973).

Oakley, Brian and Owen, Kenneth. *Alvey: Britain's Strategic Computing Initiative* (London: Massachusetts Institute of Technology Press, 1989).

OECD, *Technical Cooperation Agreements Between Firms: Some Initial Data and Analysis* (Paris: OECD, 1986).

OECD, *Information Technology and New Growth Opportunities* (Paris: OECD, 1989).

OECD, *Major R&D Programmes for Information Technology* (Paris: OECD, 1989).

Perlmutter, Amos. 'The Presidential Political Center and Foreign Policy', *World Politics* (Vol. 27, No. 1, 1974), pp. 87-106.

Ponting, Clive. *The Right to Know: The Inside Story of the Belgrano Affair* (London: Sphere Books, 1985).

Ponting, Clive. *Whitehall: Tragedy and Farce* (London: Hamish Hamilton, 1986).

Poullet, Edouard and Deprez, Gerard. 'The Place of the Commission within the Institutional System' in Christopher Sasse, *et. al.* (eds.), *Decision-making in the European Community* (New York: Praeger, 1977).

Pressman, Jeffrey L. and Wildavsky, Aaron. *Implementation* (London: University of California Press, 1984).

Quintas, Paul. 'Engineering Solutions to Software Problems: Some Institutional and Social Factors Shaping Change', *Technology Analysis & Strategic Management* (Vol. 3, No. 4, 1991).

Quintas, Paul. Working Paper No. 16, April 1992.

'Report of the Framework Programme Review Board', (Brussels, June 1989).

Richards, Peter. *Parliament and Foreign Affairs* (London: Allen & Unwin, 1967).

Riddell, Peter. *The Thatcher Era and Its Legacy* (Oxford: Basil Blackwell, 1991).

Rosati, Jerel A. 'Developing a Systematic Decision-Making Framework: Bureaucratic Politics in Perspective', *World Politics* (Vol. 23, No. 2, January 1981), pp. 234-52.

Rosenau, James N. *The Scientific Study of Foreign Policy* (New York: Free Press, 1971).

Samson, Anthony. *Anatomy of Britain* (London: Hodder and Stoughton, 1962).

Sandholtz,Wayne Arthur. *Crisis and Collaboration in European Telematics.* PhD dissertation, Department of Political Science at the University of California at Berkeley, 1989.

Sandholtz, Wayne and Zysman, John.'1992: Recasting the European Bargain', *World Politics* (Vol. 42, No. 1, October 1989), pp. 95-128.

Scholtz, John T. and Wei, Feng-heng. 'Regulatory Enforcement in a Federalist System', *American Political Science Review* (Vol. 80, 1986), pp. 1249-1270.

Science Research Council. *Proposed New Initiatives in Computing and Computer Applications*, The Roberts Report (London: Science Research Council, March 1979).

Science Engineering Research Council. 'After the Alvey Program -- Academic Research in Information Technology', report by a Working Party of the SERC Engineering Board, March 1986.

Seldon, Anthony. 'The Cabinet Office and Coordination 1979-87', *Public Administration* (Vol. 68, Spring 1990), pp. 103-21.

Servan Schreiber, Jean Jacques. *Le Defi Americain* (Paris: De Noel, 1967).

Sharp, Margaret (ed.). *Europe and the New Technologies* (London: Francis Pinter, 1985).

Sharp, M. and Shepherd, G. *Managing Change in British Industry* (Geneva: International Labour Office, 1987).

Sharp, Margaret and Shearman, Claire. *European Technology Collaboration* (London: Routledge and Kegan Paul, 1987).

Sharp, Margaret. 'The Single Market and European Policies for Advanced Technologies', *The Political Quarterly* (Special Issue 'The Politics of 1992', 1990), pp. 100-20.

Sharp, Margaret. 'The Community and the New Technologies' in Juliet Lodge (ed.). *The EC and the Challenge of the Future* (London: Pinter, 1993).

Shearman, Claire. 'European Collaboration in Computing and Telecommunications: A Policy Approach' in Kenneth Dyson and Peter Humphreys (eds.). *Politics of the Communications Revolution* (London: Frank Cass, 1986).

Shlaim, Avi., Jones, Peter and Sainsbury, Keith. *British Foreign Secretaries Since 1945* (Newton Abbot: David and Charles, 1977).

Simon, Herbert. *Administrative Behaviour* (New York: Free Press, 1976).

SIPRI Yearbook 1987 (Oxford: Oxford University Press, 1987).

Smith, Brian. *Policy Making in British Government* (Oxford: Martin Robertson, 1976).

Smith, Steve. 'Allison and the Cuban Missile Crisis: A Review of the Bureaucratic Politics Model of Foreign Policy Decision-Making', *Millennium: Journal of International Studies* (Vol. 9, No. 1, Spring 1980), pp. 21-40.

Smith, Steve. 'Policy Preferences and Bureaucratic Position: The Case of the American Hostage Rescue Mission', *International Affairs* (Vol. 61, No. 1, Winter 1984/85).

Smith, Steve and Smith, Michael. 'The Analytical Background: Approaches to the Study of British Foreign Policy' in Michael Smith, Steve Smith and Brian White (eds.). *British Foreign Policy: Tradition, Change & Transformation* (London: Unwin Hyman, 1988).

Smith, Steve. 'Perspectives on the Foreign Policy System: Bureaucratic Politics Approaches' in Michael Clarke and Brian White (eds.). *Understanding Foreign Policy: The Foreign Policy Systems Approach* (Aldershot: Edward Elgar, 1989).

Smith, Steve. 'Foreign policy analysis and the study of British foreign policy' in Lawrence Freedman and Michael Clarke (eds.). *Britain in the World* (Cambridge: Cambridge University Press, 1991).

Steinbruner, John D. *The Cybernetic Theory of Decision Making* (Princeton, NJ: Princeton University Press, 1974).

Steiner, M. 'The Elusive Essence of Decision', *International Studies Quarterly* (Vol. 21, 1977), pp. 389-422.

Taylor, Paul. *The Limits of European Integration* (Beckenham: Croom Helm, 1983).

Taylor, Paul. 'The New Dynamics of EC Integration in the 1980s' in Juliet Lodge (ed.). *Institutions and Policies of the European Community* (London: Pinter, 1983).

Thatcher, Margaret. *The Downing Street Years* (London: HarperCollins, 1993).

'The Role of the Science and Engineering Research Council in Information Technology', *Information Technology and Public Policy* (Vol. 2, No. 1, 1983), p. 24-29.

Truman, David B. *The Governmental Process: Political Interests and Public Opinion* (New York: Knopf, 1951).

Tucker, Robert W. *The Purpose of American Power: An Essay on National Security* (New York: Praeger, 1981).

Tunstall, Jeremy and Palmer, Michael B. *Liberating Communications: Policy-Making in France and Britain* (Oxford: Basil Blackwell, 1990).

Valenta, Jiri. *Soviet Intervention in Czechoslovakia, 1968: Anatomy of a Decision* (Baltimore, MD: Johns Hopkins University Press, 1979).

Verba, Sidney. 'Assumptions of Rationality and Non-Rationality in Models of the International System' in James N. Rosenau (ed.). *International Politics and Foreign Policy* (New York: Free Press, 1969).

Vital, David. *The Making of British Foreign Policy* (London: Allen & Unwin, 1968)

Wagner, W. 'Dissolving the State: Three Recent Perspectives on International Relations', *International Organization* (Vol. 28, 1974), pp. 436-66.

Walker, Timothy. Correspondence to Department of Trade and Industry, 'Programmes Run Under the Joint Framework for Information Technology, internal mimeo, 15 September 1992.

Wallace, Helen. 'The British presidency of the European Community's Council of Ministers: the Opportunity to Persuade', *International Affairs* (Vol. 62, No. 4, Autumn 1986).

Wallace, Helen, *et. al.* (eds.). *Policy Making in the European Community*, Second Edition (Chichester: John Wiley & Sons, 1989).

Wallace, William. *The Foreign Policy Process in Britain* (London: Allen and Unwin, 1977).

Wallace, Wallace. 'Old States and New Circumstances: the International Predicament of Britain, France and Germany' in William Wallace and William E. Paterson (eds.). *Foreign Policy Making in Western Europe: A Comparative Approach* (Farnborough: Saxon House, 1978).

Wallace, William. *Britain's Bilateral Links within Western Europe* (London: Routledge and Kegan Paul, 1984).

Waltz, Kenneth. *Foreign Policy and Democratic Politics: The American and British Experience* (Boston, MA: Little, Brown, 1967).

Ward, Hugh and Edwards, Geoffrey. 'Chicken and Technology: The Politics of the European Community's Budget for Research and Development', *Review of International Studies* (Vol. 16, No. 2, April 1990), pp. 111-29.

Webb, Carole. 'Theoretical Perspectives and Problems' in Wallace, *et. al.* (eds.), *Policy Making in the European Community*, Second Edition (Chichester: John Wiley & Sons, 1989).

Weber, Max. *From Max Weber: Essays in Sociology*, Gerth, H.H. and Mills, C. Wright (eds.), (London: Routledge & Kegan Paul, 1961).

Weil, Herman M. 'Can Bureaucracies be Rational Actors?', *International Studies Quarterly* (Vol. 19, No. 4, 1975).

Weingast, Barry R. and Moran, Mark J. 'Bureaucratic Discretion or Congressional Control: Regulatory Policymaking by the Federal Trade Commission', *Journal of Political Economy* (Vol. 91, 1983), pp. 765-800.

Welch, David A. 'The Organizational Process and Bureaucratic Politics Paradigms', *International Security* (Vol. 17, No. 2, 1992), pp. 112-44.

Wolfers, Arnold. *Discord and Collaboration: Essays on International Politics* (Baltimore, MD: The Johns Hopkins University Press, 1962).

Wood, B. Dan. 'Principals, Bureaucrats, and Responsiveness in Clean Air Enforcements', *American Political Science Review* (Vol. 82, No. 1, March 1988), pp. 213-34.

Wood, B. Dan and Waterman, Richard W. 'The Dynamics of Poiltical Control of the Bureaucracy', *American Political Science Review* (Vol. 85, No. 3, September 1991), pp. 801-28.

Woolcock, Stephen. 'Information Technology: the Challenge to Europe', *Journal of Common Market Studies* (Vol. 21, No. 4, June 1984), pp. 515-31.

Yanarella, E. '"Reconstructed Logic" and "Logic-in-use"' in 'Decision-making Analysis: Graham Allison', *Polity* (Vol. 8, 1975), pp. 156-72.

Young, Hugo. *One of Us* (London: Pan Books, 1990).

Zysman, John. 'US Power, Trade and Technology', *International Affairs*, (Vol. 67, No. 1, 1991), pp. 81-106.

Newspapers and Journals

Agence Europe
British Business
Computer Weekly
Computing
Economist
Electronics Times
Electronics Weekly
Engineer
Europolitique
Financial Times
Guardian
Independent
Informatics Daily Bulletin
Sunday Times
Times

Research Methodology
Appendix A

Although several studies have examined British participation in Esprit from a technical and statistical point of view, this thesis is the first to explore British policy in Esprit from a decision-making perspective. Very little information about the policy process is publicly available and that which is comes primarily from Commons and Lords debates, Select Committee hearings and brief, and often tantalizing, allusions in journals and newspapers. Because information in these sources is limited, interviews were the primary source of information.

A strict and well-structured interviewing methodology was employed in order to piece together correctly the policy-making puzzle. Based on preliminary research, categories of actors were identified: Members of Parliament, Ministers, civil servants (from the Ministry of Defence, Department of Trade and Industry and Science and Engineering Research Council, Cabinet Office, Treasury and the European Commission), industrialists and academics. Eighty-four interviews were conducted and the choice of interviewees was based on three considerations. First, their personal involvement in the policy-making process, the degree of which was indicated by other interviewees and literature searches. Second, whether they were omitted from the policy process when protocol or common sense would suggest that they should have been involved. Non-participation was taken to be as important as its converse. Third, the degree of influence exerted by the category of actor into which individuals fell. An attempt was made to chose the number of interviewees from each category according to the apparent influence of each category in the policy process. A list of interviews appears in Appendix B.

Regarding the civil servants interviewed, I made a short-list, from preliminary reading, of civil servants whose names appeared frequently. They were primarily from the DTI and my first interviews were conducted with these individuals. Many recommended that I speak with other civil servants and when this occurred, I researched the involvement of the individual to whom I was referred and chose whether or not to ask for an interview. During those early interviews, I asked whether there were individuals, or divisions of the DTI or any other Whitehall Department, who were not involved in the process but should have been. If the answer was affirmative, I examined Whitehall and DTI Departmental protocol and decided whether to interview the missing civil servants.

With the exception of one gentleman, I am confident that I interviewed all civil servants from the DTI who had a significant influence in Esprit, whether directly or

through their absence. These included civil servants from the DTI's Policy Planning Unit, Research Technology Policy division, Electronic Applications division and the various embodiments of information technology divisions. Mr John Major, former Under Secretary of LA division, refused my numerous pleas for an interview, but he was willing to reveal something of his involvement in Esprit over the telephone when I contacted him for an interview. Civil servants of all ranks were interviewed. Some were currently in the civil service; some had retired. Care was taken to interview both administrators and specialists as well as civil servants from all DTI divisions with any responsibility for R&D.

The number of interviews conducted with civil servants from the Ministry of Defence and the Science and Engineering Research Council compared to those from the DTI is indicative of their relative influence on British policy-making in Esprit. Only during Esprit's first phase did the MoD have any real influence and that was through the figure of Dr William Fawcett, Director of Alvey VLSI, who was interviewed. Prior to moving to the Alvey Directorate, Dr Fawcett was in charge of the Physics Group at the MoD's Royal Signals and Radar Establishment. The SERC's involvement in Esprit was similarly limited, but well represented in interviews with Dr David Worsnip (who was in charge of the SERC's involvement in Esprit II), Mr Brian Oakley (who was Secretary of the SERC before moving to the Alvey Directorate) and Dr David Thomas (who was simultaneously head of Alvey IKBS and information technology in the SERC during Esprit I).

Civil servants from the Cabinet Office and the Treasury were invaluable. The number of civil servants from these organization who were directly involved in Esprit was surprisingly small, but those who were involved agreed to interviews and were very helpful. Not only did they provide detailed information of their role in Esprit, but they patiently answered my queries regarding Whitehall mechanisms and procedures. They were also very helpful in providing sensitive information before it was made publicly available.

Regarding interviews with members of the European Commission, I obtained a list of all members of DGXIII. I requested interviews with the head of DGXIII and Esprit, but was referred to their juniors. I conducted interviews with Commissioners in charge of individual Esprit sub-programmes, their juniors and the Secretary of the Esprit Advisory Board and Esprit Steering Committee, but regret that I was unable to meet with Mr Carpentier or Mr Cadiou. Nevertheless, I believe the individuals I did interview painted a fairly accurate picture of the Esprit process and relations between Commissioners and civil servants from the DTI.

Not surprisingly, the most difficult interviews to schedule were with Members of Parliament and Ministers. Regarding the former, I am satisfied that I met with

perhaps the two most influential MPs on the information technology front: Mr Kenneth Warren, former Chairman of the Commons Select Committee on Trade and Industry, and Mr Michael Marshall, Chairman of the Parliamentary Information Technology Committee. Regarding interviews with Ministers, I was able to interview only Lord Patrick Jenkin, Mr Kenneth Baker and Mr Geoffrey Pattie. Fortunately, however, these Ministers were in office during the most important phases of Esprit's operation. These very colourful gentlemen provided extremely enlightening glimpses into Whitehall and Westminster. Numerous attempts were made to interview Mrs Thatcher, Mr Kenneth Clarke and Lord David Young, but to no avail.

Industrialists and academics were also valuable sources of information. I first drew up a list of industrialists and academics who were members of the Alvey Committee, Alvey Directorate, Alvey Steering Committee, Alvey Advisory Board, the Esprit Advisory Board and Esprit Steering Committee. Although I met with many individuals, it quickly became apparent that academic and industrial participation in Esprit and Alvey was a rather exclusive affair. A balanced view was needed, so I identified academics and industrialists not involved in Esprit or Alvey. Although I met with several, it seems that employment in the IT sector is rather precarious and I had difficulty tracing individuals from smaller companies that had been excluded from Alvey or Esprit. For their perceptions, I had to rely primarily on evaluations of Esprit and Alvey performed by academics. Nevertheless, most academics and industrialists who played an important role in decision-making were interviewed.

All interviews, with the exception of several ones over the telephone, were conducted in a similar manner. I sent a letter introducing myself, my research and reason for wanting an interview. Each letter was followed a week later by a telephone call. Before each interview, I introduced my research and gave an overview of the questions I would ask. Each interviewee within a particular category was asked similar questions, which were complimented with questions tailored to their particular involvement. (In several interviews, I was asked to send a list of questions prior to the meeting.) I brought a tape recorder to every meeting. In cases where tape-recording was permitted, I have used direct quotes rather than risk losing insinuations and emotions by paraphrasing. About half of the interviewees requested that I not use a tape recorder and in these cases, I took extensive notes and, except in cases where I was certain that I noted a statement correctly, refrained from quoting the interviewee *verbatim* and paraphrased them instead. I have honoured the requests of any interviewee who asked not to be attributed with a particular statement. I found it surprising how few interviewees asked not to be attributed. In fact, only one interviewee, Mr Oscar Roith (former DTI Chief Scientist) placed strict conditions on my use of his testimony.

Senior civil servants and industrialists were remarkably forthcoming and often in a intense and passionate manner. I was surprised to find that R&D, information technology, Esprit or Alvey could be the subject of the emotional outpourings I witnessed (and often had to endure). It seemed that interviewees associated this thesis' subject matter with many political hot-potatoes: British sovereignty, Mrs Thatcher's leadership style, the role of government, the future of Britain's economy. Interviewees were often directly, and not so diplomatically, critical of particular individuals. I had no desire to portray any interviewee in a bad light and used derogatory statements and information only when it was vital to an argument advanced in this thesis.

Much of the information gathered from interviews has never been recorded and thus represents a substantial and original contribution to the body of existing literature on British foreign policy-making, on the organization of the British government for science and technology policy-making, on Esprit and on the operations of the European Commission. While interviews are a valid and strong method of research, the subjectivity involved weakens them as a research method. Thus, I took great care to validate and confirm that information provided during an interview was accurate. Two methods were used. First, every interviewee within a particular category was asked similar questions. If interviewees answered in a similar manner, the information was deemed accurate. In the cases where questions were tailored to a particular individual or where information was not verifiable, that information is presented as the viewpoint of that individual. Second, wherever possible, I used secondary sources to verify information. House of Commons and House of Lords debates, Select Committee inquiries and memoirs proved invaluable in this regard as did Brian Oakley and Kenneth Owen's account of Alvey, *Alvey: Britain's Strategic Computing Initiative*.

Numerous secondary sources were used. Thanks to technological advances in document storage and retrieval, I was able to carry out an exhaustive search of newspaper and journal articles filed under the following key words: information technology, Esprit, science and technology, research and development, Alvey Programme and individuals' names. Articles from the *Financial Times*, the *Economist*, *Electronics Weekly, Electronics Time, Computer Weekly, Computing, Engineer* and *Infomatics Daily Bulletin* were particularly useful secondary sources, providing background information and corroboration of facts gathered during interviews. One journal, *Information Technology and Public Policy*, was a useful source of information on British governmental initiatives in the field of IT R&D. I also searched DTI publications such as *British Business* and *JFIT News* and popular journals such as *Science* and *New Scientist*. I found the latter two to be of limited use. For information on activities of the European Commission, I monitored *Agence Europe* and *Europolitique*.

Publications of the Alvey Directorate were valuable. I found most of these publications through the British Library of Political and Economic Science or in the DTI library. When documents were not available, former members of the Alvey Directorate could usually provide them. Because the Alvey Directorate was interested to present its own programme in the best light possible, much of the information provided had to be used with caution. Fortunately, evaluations of Alvey were performed by the Science Policy Research Unit (SPRU) at Sussex University and the Programme for Policy Research in Engineering Science and Technology at the University of Manchester (PREST). Copies of these evaluations were obtained through the SPRU library and from members of the evaluation teams. These evaluations are geared primarily toward a technical analysis of the Alvey Programme and had limited information on Esprit. Nevertheless, they were useful for background research and in preparation for interviews.

Documentation from the European Commission, while abundant and easily accessed at the Commission's library in Brussels, proved disappointing. In 1991 the Commission began publishing a magazine, called *DGXIII*, in which Esprit issues were reported, but prior to that time most Community documentation on Esprit was limited to that published in the *Official Journal*, which consists primarily of proposals from the Commission to the Council and the Council's approval of EC programmes. Several reviews of Esprit were financed by the Commission, but their lack of statistical analysis was astonishing. The best statistics on British participation in Esprit are found in a publication, *An Assessment of Esprit in the UK*, which was prepared by three British academics.

A systematic search of *Hansard*, Select Committee reports and finds from other governmental bodies (such as the National Economic Development Office, Advisory Committee on Research and Development and the Advisory Council on Science and Technology) were also valuable.

List of Interviewees
Appendix B

Dr Steven Billet	AT&T (Washington, DC), Director of Federal Government Affairs. Previous: AT&T (Brussels), Director of Public Affairs	23 July 1991
Mr Harry Elhardt	AT&T (Brussels), Director, EC Public Affairs	23 July 1991
Ms Alison Birkett	Commission of the European Communities, DGXIII (Economic and International Aspects)	24 July 1991
Mr Ross Cooper	Commission of the European Communities, DGXIII (Aurora Programme)	24 July 1991
Mr Michael Hardy	Commission of the European Communities, DGXIII (Director, General Affairs)	24 July 1991
Mr Stephen Joseph	Commission of the European Communities, DGXIII (Secretary of Esprit Steering Committee and Esprit Advisory Board)	24 July 1991 9 July 1992
Dr Philip Roe	DTI (Information Manufacturing Technology Division). Previous: Seconded to Commission of the European Communities, DGXIII	24 July 1991 4 November 1992
Mr J Rosenbaum	Commission of the European Communities, DGXIII (RACE)	24 July 1991
Mr Barney Trench	Commission of the European Communities, DGXIII (Public Relations)	24 July 1991
Mr Steven Brummel	Akin, Gump, Strauss, Hauer & Feld (Consultant on EC IT policy)	25 July 1991

Mr Donald Pongrace	Akin, Gump, Strauss, Hauer & Feld (Consultant on EC IT policy)	26 July 1991
Mr Des Langford	DTI (Esprit Unit)	21 October 1991
Professor John Ashworth	Director, London School of Economics. Previous: Chief Scientific Advisor, Central Policy Review Staff	22 October 1991
Mr Kenneth Warren	Member of Parliament (Conservative). Previous: Chairman, House of Commons Select Committee on Trade and Industry	5 November 1991
Mr Herman Houser	Active Book Company, Chairman; Chairman, Esprit Advisory Board	28 November 1991 (telephone)
Mr Derek Flynne	DTI (Head, Esprit Unit)	9 December 1991 3 December 1992
Ms Christine Symes	DTI (Research Technology Policy Division)	7 January 1992
Ms Angela Mison Fulleylove	British Aerospace, Information Technology Strategist	8 January 1992
Sir John Fairclough	Rothschild Ventures Ltd., Chairman. Previous: Chief Scientific Advisor, Cabinet Office	10 January 1992
Mr Doug Hoyle	Member of Parliament (Labour)	16 January 1992
Mr David Warren	Cabinet Office (Office of Science and Technology)	20 January 1992
Mr Alan Mayo	Cabinet Office (Office of Science and Technology)	20 January 1992 23 June 1992 9 March 1993

Mr Alastair Macdonald	DTI, Deputy Secretary (Aerospace, Chemicals and Biotechnology, Electronics and Electrical Engineering, Steel, Metals and Minerals, Vehicles divisions). Previous: DTI, Deputy Secretary (Aircraft, Electronic Applications, Information Technology, Telecommunications and Post Office and Radiocommunications divisions); Under Secretary (Information Technology division); Member of IT86 Committee; Member of Alvey Steering Committee; Member of Alvey Committee	21 January 1992 28 October 1992
Dr John Thynne	Electronics Components Industry Federation, Director. Previous: Under Secretary, DTI (Electronic Applications and Information Technology divisions)	23 January 1992 15 October 1992 2 December 1992
Mr David Dace	ICL, Technical Director	4 February 1992
Mr Brian Oakley	Logica (Cambridge), Director. Previous: Director, Alvey Programme; Member of Alvey Committee; Secretary SERC	25 February 1992 2 June 1992
Dr Dennis Potter	DTI (Information Manufacturing Technology division. Director of Systems Software and Architecture branch). Seconded from British Aerospace.	17 March 1992
Mr Derek Roberts	University College London, Provost. Previous: GEC, Deputy Managing Director (Technology); Member of Alvey Committee; Member of Esprit Steering Committee	18 March 1992
Ms Diane Williams	DTI (Information Manufacturing Technology Division)	23 March 1992 (telephone)

Mr Tim Simmons	British Aerospace, Esprit Project Manager	6 May 1992 (telephone)
Mr Virgilio Pasquali	ICL, Manager for Group Technical Strategy. Previous: Member of Rountable 12 Steering Committee	8 May 1992
Mr Robert Cooper	MARI Advanced Technology, Director	12 May 1992
Mr Din Ghali	MARI Advanced Technology, Deputy Director	12 May 1992
Mr Reay Atkinson	Retired. Previous: DTI, Under Secretary (Information Technology division); Head of Tokyo mission	12 May 1992
Sir Michael Marshall	Member of Parliament (Conservative); Chairman, Parliamentary Information Technology Committee	14 May 1992
Ms Rosalie Zobel	Commission of the European Communities, DGXIII (Deputy Head of Esprit Office Systems)	11 June 1992 (telephone)
Dr Timothy Walker	DTI, Under Secretary (Energy division). Previous: DTI, Under Secretary (Information Engineering Directorate), Policy Planning Unit, Private Secretary to Paul Channon and David Young; Director (Administration), Alvey Directorate	27 August 1992
Mr David Wiseman	Independent Committee for the Supervision of Telephone Information Standards, Head of Secretariat. Previous: DTI (Research Technology Policy division)	14 October 1992

Dr David Thomas	Imperial College, Pro-Rector (Contracts). Previous: Director (IKBS), Alvey Directorate; Head of Information Technology in SERC; Member of IT86 Committee	26 October 1992
Professor Roger Needham	Cambridge Computer Laboratory, Director. Previous: Member of Alvey Committee; Member of Alvey Steering Committee	26 October 1992
Mr Roger Hird	DTI, West Midlands. Previous: Director (Administration), Alvey Directorate; Member of IT86 Committee; DTI (Electronics Applications division)	28 October 1992 8 November 1992 (telephone)
Mr Chris Barrow	Retired. Previous: Director (MMI), Alvey Directorate; Plessey, Head of Advanced Systems; Member of Esprit Office Automation panel	29 October 1992
Mr Robert Morland	Scientific Generic. Previous: Director (VLSI), Alvey Directorate; PA Consulting	3 November 1992
Mr Geoffrey Pattie	Member of Parliament (Conservative). Previous: Minister for Information Technology	9 November 1992 26 November 1992
Mr John Major	Retired. Previous: DTI, Under Secretary (Electronic Applications Division); Member of Alvey Committee; Member of Alvey Steering Committee; Member of IT86 Committee	9 November 1992 (telephone conversation)
Sir Austin Bide	Retired. Previous: Chairman, IT86 Committee; Glaxo, Chairman; British Leyland; Chairman	10 November 1992
Dr WB Willott	Export Credits Guarantee Department. Previous: DTI, Under Secretary (Information Technology division)	10 November 1992

Mr Ian Young	DTI (Information Manufacturing Technology division)	12 November 1992
Sir Robert Telford	Retired. Previous: Chairman, Alvey Steering Committee; GEC-Marconi, Chairman and Life President; Department of Industry Electronics and Avionics Requiments Board	12 November 1992
Dr AJ Wallard	National Physical Laboratory. Previous: DTI (Research Technology Policy division and Information Engineering division)	13 November 1992
Dr William Fawcett	Retired. Previous: Director (VLSI), Alvey Directorate; Head of Physics Group at MoD's Royal Signals and Radar Establishment; Thorn-EMI Protech Research, Director	18 November 1992
Mr Oscar Roith	London Transport. Previous: DTI, Deputy Secretary (Chief Engineer and Scientist and head of Research Technology Policy division)	19 November 1992
Mr Stephen Roberts	Commission of the European Communities, DGXIII (Secretary of Esprit Steering Committee and Esprit Advisory Board)	23 November 1992
Mr David Talbot	Commission of the European Communities, DGXIII (Head of Esprit Software and Advanced Information Technology). Previous: Director (Software Engineering), Alvey Directorate; ICL, Strategy Manager	24 November 1992
Mr Andrew Duguid	Lloyds of London. Previous: DTI (IT division, Policy Planning Unit, Private Secretary to Keith Joseph)	27 November 1992
Dr Helen Wallace	Sussex University	30 November 1992
Dr Alan Cawson	Sussex University	30 November 1992

Mr Paul Quintas	Science Policy Research Unit, Sussex University	9 December 1992
Dr Ken Guy	Science Policy Research Unit, Sussex University	9 December 1992
Lord Patrick Jenkin	House of Lords. Previous: Secretary of State at Department of Industry	10 December 1992
Professor Eric Ash	Imperial College, Rector. Previous: Member of Alvey Steering Committee; Chairman, SERC After-Alvey Inquiry	14 January 1993
Mr Michael Corcoran	Treasury (European Division)	19 January 1993
Mr John Barber	DTI (Economics, Market Intelligence and Statistics division)	24 January 1993 (telephone)
Mr Philip Hills	DTI (Research Technology Policy division)	25 January 1993
Mr Adrian Grilli	DTI (Research Technology Policy division)	25 January 1993 11 February 1993
Mr John Head-Rapson	DTI (Insurance division). Previous: DTI (Information Engineering Directorate)	2 February 1993
Sir John Alvey	Retired. Previous: Chairman, Alvey Committee; British Telecom, Director of Technology	2 February 1993
Dr Alastair Keddie	DTI (Research Techology Policy division)	23 February 1993
Dr Margaret Sharp	Sussex University	26 February 1993
Dr David Worsnip	SERC, Head of Information Technology	1 March 1993

Mr Kenneth Baker	Member of Parliament (Conservative). Previous: Chairman, Conservative Party; Home Office Secretary; Secretary of State for Education; Minister for Information Technology in DTI	3 March 1993
Ms Linda Prior	DTI (Information Manufacturing Technology division). Previous: Alvey Directorate, director of publicity	29 May 1993

Glossary of Technical Terms[1]
Appendix C

Computer Aided Design

The generating of computer automated designs for visual display. In the design of major systems (such as aircraft or the layout of hospitals), computers are being used not just to perform the task of the draughtsmen but to use their ability to compute in order to optimize the design engineering.

Hardware

The physical mechanical and electrical components of a computer system.

Integrated Circuits

A field of electronics developed during the early 1950s to do with miniaturization of computer equipment so that many electronic components can be placed on silicon 'chips' that run computer applications. There are two major types of integrated circuits: application specific and standard. As the name would suggest, application specific integrated circuits (ASICs) are silicon chips that are modified according to the specific demands of a user. Standard integrated circuits, on the other hand, have a regularized form and are used for generalized or common needs.

Intelligent Knowledge-Based Systems

An intelligent knowledge-based system (IKBS) is intended ultimately to reason logically from initial ideas to conclusions; take decisions; and give advice. To do this a large amount of knowledge is needed, and hence more powerful processing systems. A powerful problem-solving capacity to apply knowledge is also needed and therefore more effective transfer of human intelligence to the computer.

Man-Machine Interface

Improving the ease with which people can use and interact with computers is fundamental to progress. Commercial success will come to those who make their products 'user friendly', that is easy for non-experts to use. So the interface instruments (verbal, visual and touch input-output devices) need to be improved. So does understanding communication across the interface. This involves work on speech and image processing.

Semiconductor

A material (for example, silicon or gallium arsenide) which, though basically an insulator, can conduct electricity if suitably treated.

---

[1] From House of Lords Select Committee on the European Communities, *ESPRIT*, 8th Report, Session 1984-85 (London: HMSO, 1985), pp. vii-viii.

Software

Defined narrowly, software is the programmes and routines which are written to instruct the computer to perform data processing operations. Defined more broadly, software encompasses all that is not hardware: the work and documentation that goes into a data processing system, as well as computer languages, libraries, internal operating systems, compilers and industrial or commercial application programmes.

Software Engineering

The production of reliable and cost-effective software. It is still common to build even large and application-specific computer systems using *ad hoc* techniques. But as systems become more complex and costly, and as markets become more competitive, an *ad hoc* approach becomes unacceptable. Software engineering provides an engineered approach to reliability, conformity with requirements and cost-effectiveness.

Very Large Scale Integration (VLSI)

Microelectronics provide the physical infrastructure for the collection, transmission and manipulation of information. This predominately takes the form of circuits placed on silicon chips. Research in microelectronics aims to increase the speed and capability of silicon chips while reducing their power consumption, size and cost. The ability to make such advances hinges on the ability to place more circuits on a single silicon chip. This technology is called Very Large Scale Integration.