YESTERDAY IN PARLIAMENT: BRITISH POLITICIANS AND DEBATE OVER STRATOSPHERIC OZONE DEPLETION, 1970 – 1992

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THE GREENING OF POLITICS: A NEED TO STUDY SPECIFICS?

Recent years have seen increasing attention to the apparent greening of British politics. There has also been considerable debate about the motives for such a revision of the political agenda, and speculation about the limitations of the real extent of change (Owens 1986, Porritt & Winner 1988, Ward et al 1990, O'Riordan 1991 & 1992, Robinson 1992). Such interest is more than academic, for the importance of political decision-makers in mobilising preventative, regulatory and restorative action against environmental degradation at local, national and international levels, is increasingly apparent. The solving of environmental problems involves more than the advancement of scientific and social understanding, it also requires the resources and the will to effect any necessary changes; influence over these last being a traditional prerogative of the politician. Interactions between the spheres of politics and of science are thus of considerable importance; politicians' understanding of the work of environmental scientists, governmental funding for new research, perceptions of public interest in environmental issues and calculation of electoral advantages in pursuing particular policies all shape the context of decision-making about our environmental futures.

In drawing attention to the general greening of politics, however, our understanding is challenged by the variety of concerns and ideas that fall under the broad heading of environmentalism. The green label has been applied to actions as different as the prevention of street litter and the preservation

of biodiversity in tropical rain forests, while campaigners both for and against nuclear power generation have portrayed themselves as champions of the environment. There are strong elements of continuity with established (and often establishment) interests in conserving our environmental, and indeed cultural, heritage. Yet green ideas have also become allied with a new radicalism which offers a comprehensive critique of the expansionist and materialist basis of modern industrial capitalism (for example Bookchin 1982). It seems unlikely that such a diversity of opinions and actions can be fully explained as a coherent whole. If we are to develop a more sophisticated understanding of the greening of politics and the politicisation of environmentalism attention must be paid to the evolution of particular concerns.

Hence the focus of the present paper which is specific both in its analysis of a single, if complex, issue, that of stratospheric ozone depletion, and in concentrating on the distinctive quality of debate within the British political system. In particular, attention will be devoted to the interest displayed in ozone depletion through Parliamentary questioning by Members of the House of Commons. Here we are dealing with an important and influential group within the wider sphere of state politics. We are also focusing upon reactions within the established political parties, for a distinguishing aspect of the British political system, in contrast to several countries in continental Europe, is the continued electoral exclusion of a specifically green party from the national Parliament.

Consideration of stratospheric ozone depletion as an issue involves exploration of what is literally one of the largest sources of environmental concern that we face today. The prospect of adverse change at the global level presents new challenges, not merely in formulating an appropriate response, but more fundamentally in comprehending the very existence of problems at once so potentially momentous and yet so nebulous. Concerns raised by global change are rather different from traditional concerns with localised environmental degradation, planning and conservation; problems that are perhaps more easily represented by Parliamentarians as issues specific to their own constituencies, or to particular interest groups with which they are associated. In theory global issues are of importance to all, however it can be the case that the more general the concern the more likely it is that no individual will pursue it as their particular interest. Moreover, many of the most critical dimensions of global environmental change are incremental, rather than being punctuated by particular and identifiable crisis events which have traditionally been seen as triggering political attention and concern (O'Riordan 1991, 173).

STRATOSPHERIC OZONE DEPLETION: NATIONAL PERSPECTIVES ON A GLOBAL ISSUE

The combatting of stratospheric ozone depletion emerged as an issue with which the British government identified itself strongly in the later 1980s, asserting considerable success for efforts to encourage the reform of the practices of producers and consumers of ozone depleting substances. This was true not only

at a domestic level; Britain claimed influence in diplomatic initiatives to create international regulatory action, particularly through the Montreal Protocol on ozone depleting substances agreed in 1987 and the subsequent programme of more stringent revisions. In the wake of Margaret Thatcher's professions of new-found greenness in 1988 the British government hosted both a special international conference on stratospheric ozone and the second meeting of the parties to the Montreal Protocol. Against such a background Environment Minister David Trippier affirmed in 1990 that

> it is recognised, nationally and internationally, that the British government are in the lead (Hansard 182:941).

For all such claims there has been little analysis of British political responses to stratospheric ozone depletion. Ward et al explore aspects of Britain's involvement with international regulatory effort restricting the use of ozone depleting chemicals (Ward et al 1990). Yet they say relatively little about internal debate within the national political system. By comparison there are several studies which focus upon the domestic experience in North America, particularly the United States, and American influence upon the development of the new ozone diplomacy (Roan 1989, Morrisette 1989, Benedick 1991a & b). Such studies tend to portray responses from Europe, and perhaps particularly from Britain, as lagging behind American initiatives. Certainly Britain was not amongst the states to endorse limitations on the use of certain ozone depleting substances during the later 1970s when the pace was set by the

United States, Canada, the Nordic countries, the Netherlands and West Germany. Moreover, the British and French governments, in particular, seem to have been hesitant in their adoption of even the modest EEC requirement of 1980 to regulate the production of CFCs and their use in aerosols (Morrisette 1989, 806).

A variety of explanations have been offered for the contrasts between the American experience and that of the more laggardly European countries. It has been claimed, for example, that the litigious nature of American society fosters caution and a tendency to regulatory action in the face of perceived risk, a risk from ozone depleting chemicals whose discovery was very much identified with American researchers, in particular Molina and Rowland (Adamson 1990, 27; Roan 1989). Further, it has been suggested that the federal structure of government has exerted an influence; initially its importance lay in the possibility of effective localised campaigning leading to action at the level of individual states. This in turn raised the prospect of a diversity of different regulatory standards which prompted sections of American industry to set aside their initial reluctance to accept regulation and to push for uniform federal legislation. On a more general level there is claimed to have been a heightened public interest in the condition of the atmosphere as a result of national involvement with the exploration of inter-planetary space (Benedick 1991a, 115-6). These conditions were not widely replicated in Europe and indeed in Britain there may have been specific forces acting against any early and decisive regulation of ozone depleting substances. One

such was the legacy of American concerns expressed during the early 1970s about the ozone depleting potential of supersonic aircraft; this was interpreted in some quarters in both Britain and France as a politically inspired tactic calculated to undermine the Anglo-French Concorde project. Such scepticism about American motives was to persist into later rounds of the development of ozone diplomacy (Morrisette 1989, 802-3).

OZONE DEPLETION: INTEREST AND UNDERSTANDING IN BRITISH PARLIAMENTARY QUESTIONING 1970-1992

The available evidence thus suggests contrasts in responses to concerns about stratospheric ozone depletion, both between Britain and North America, and between the initial caution of the British establishment in the 1970s and its new-found vigour from the late 1980s onwards. If we are to develop an understanding of these differences and developments it seems sensible to consider the contexts within which such issues are discussed and the manner in which they are approached by the discussants. In the arena of politics official government policy is only one, albeit dominating, voice amongst many; it is appropriate therefore to consider other strands of political opinion both for their own sake and as they interact with government decision making. Thus what follows is not a detailed analysis of policy or of the results of officially sponsored research, rather the concern is to gauge the interest in and understanding of stratospheric ozone depletion displayed by a cross-section of those most involved in the British political process.

It is beyond the scope of this short paper to offer a comprehensive analysis of the different dimensions of engagement with concerns about ozone depletion and its terrestrial effects articulated by science, industry, the media, environmental groups, consumers and indeed the public in general (1). However, debate within and between all these spheres should be borne in mind as interacting with the political arena which is the locus of attention here. Indeed this is inherent in the various conceptualisations of the greening of party politics, particularly those which see change as a process-response model whereby politicians respond to external influences including public opinion, environmental campaigning, scientific discovery and actual or potential environmental hazard (Robinson 1992, 84-123). Exploration of the apparent triggers to increased environmental awareness and action in the case of stratospheric ozone forms part of the discussion that follows. But the issue of ozone depletion also demonstrates the importance of an internal political dynamic; the role of established party ideologies in shaping a response to particular environmental issues and the desire of individuals to shape a political agenda from which they derive personal and party advantage (cf Robinson 1992, 124-65).

Even within the sphere of national politics there exists a diversity of means to express interest and concern, and to press for official action, which would demand far more space than available here to explore fully. Thus attention has been focused on one simple measure of interest amongst Parliamentarians, the

questions to Ministers tabled by Members of the House of Commons. Written and oral questions are one of the main means available to backbench and Opposition Members to draw attention to issues that they perceive to be of particular concern, either because of their inherent importance or because of the political advantage to be derived from so doing. In some cases questions are also used to press for regulatory or restorative action by the government (Irwin 1988). Parliamentary procedures allow some other opportunities for individuals to bring matters before the House in forms including adjournment debates and Private Members' bills; these will be considered where appropriate, but the main analysis will be concerned with the much greater flow of Parliamentary Questions.

During the twenty years between January 1970 and the dissolution of the Commons in spring 1992 160 Members asked around 500 questions which related in some way to stratospheric ozone depletion and the use of ozone depleting substances, particularly CFCs (2). Such a level of questioning illustrates a degree of interest in these matters, but it is also to put this into perspective as one issue amongst the many that regularly prompt sessional totals of 40-50,000 questions (Irwin 1988, 83). It is also noteworthy that most Members who raised the ozone issue did so only once or twice (Table 1). This might be expected given the range of concerns competing for the attention of Members and their particular responsibility for issues more specific to their own constituencies (Radice et al 1990, 3-6). However, opportunities undoubtedly exist to raise the profile of

particular issues through an extended campaign of questioning, witness the hundreds of Parliamentary questions tabled during the early 1980s by Tam Dalyell concerning the sinking of the Argentinean warship the Belgrano, and by Tony Banks concerning the abolition of the GLC (Irwin 1988, 91). Such opportunities do not seem to have been exploited to anything approaching the same degree by any Member interested in stratospheric ozone. Indeed as several of the most regular questioners were party spokespersons on environment and related issues it seems appropriate to wonder whether their efforts were related to a personal interest or were merely required by their official position (cf Robinson 1992, 101).

Party political differences are also apparent in the pattern of questioning (Table 2). Given the Conservative majority in the Commons for most of the period under consideration it is unsurprising that they form the largest group of questioners. However, the interest displayed by Conservative backbenchers was not in proportion to the size of their representation in the House. Moreover, Conservative Members asked only half the number of questions recorded for Labour MPs. This may reflect the general tendency for greater volumes of questions to come from the Opposition rather than from the Government benches, but the discrepancy also casts doubt on the interest of Conservative Members in this particular dimension of the environmental debate. The Liberal total of questions appears large in relation to their Parliamentary strength, consistent with a general reputation as the greenest of the major national parties. In particular this

TABLE 1: OZONE & CFCS - FREQUENCY OF QUESTIONING BY INDIVIDUAL MEMBERS

QUESTIONS TABLED PER MEMBER	MPs TABLING QUESTIONS
1	85
2	32
3	14
4	6
5	8
6	2
7	-
8	1
9	3
10	1
11	-
12	1
13	1
14	1
15	-
16	1
17	1
32	1
35	1
39	1

TABLE 2: OZONE & CFCs - PARLIAMENTARY QUESTIONING - PARTY TOTALS

PARTY	MEMBERS	QUESTIONS TABLED
CONSERVATIVE	72	126
LABOUR	69	241
LIBERAL	14	83
SOCIAL DEMOCRAT	1	2
PLAID CYMRU	2	35
SNP	1	1
SDLP	1	2

reflected the efforts of their spokespersons on environment and resource issues, especially Simon Hughes who was the most persistent questioner from any party. Plaid Cymru, chiefly in the shape of Dafydd Ellis Thomas, made the most significant contribution to the exchanges of any of the other parties.

The most striking initial result of the outline survey of Parliamentary questioning, however, is the cyclical variation in attention to the issue of ozone depletion. This might be compared with previous observations of an issue attention cycle in public responses to environmental matters. However, it is by no means clear that responses to the concerns raised about stratospheric ozone depletion passed through the stages outlined in Downs' classic model (Downs 1972). Graphs recording monthly totals of Members tabling questions and the number of questions asked (Figures 1a & 1b) both display an initial upswing during the mid to late 1970s, followed by a period in the early 1980s when Members' interest died away altogether. Its revival during the third quarter of the 1980s was relatively slow; however, by the later years of the decade interest reached unprecedented proportions which peaked during 1989 when 74 MPs asked a total of 184 questions. The state of the ozone layer and the damage attributed to CFCs were also singled out as issues for Commons debates on two occasions during the 1987-88 session, the second of these being prompted by the publication of the first report of the Environment Committee on Air Pollution (Hansard 125:794-802; 137:314-35). Such themes were also discussed in subsequent debates on the environment, climate change and the Government's

Figure 1a. Ozone and CFCs – Chronology of MP's tabling questions

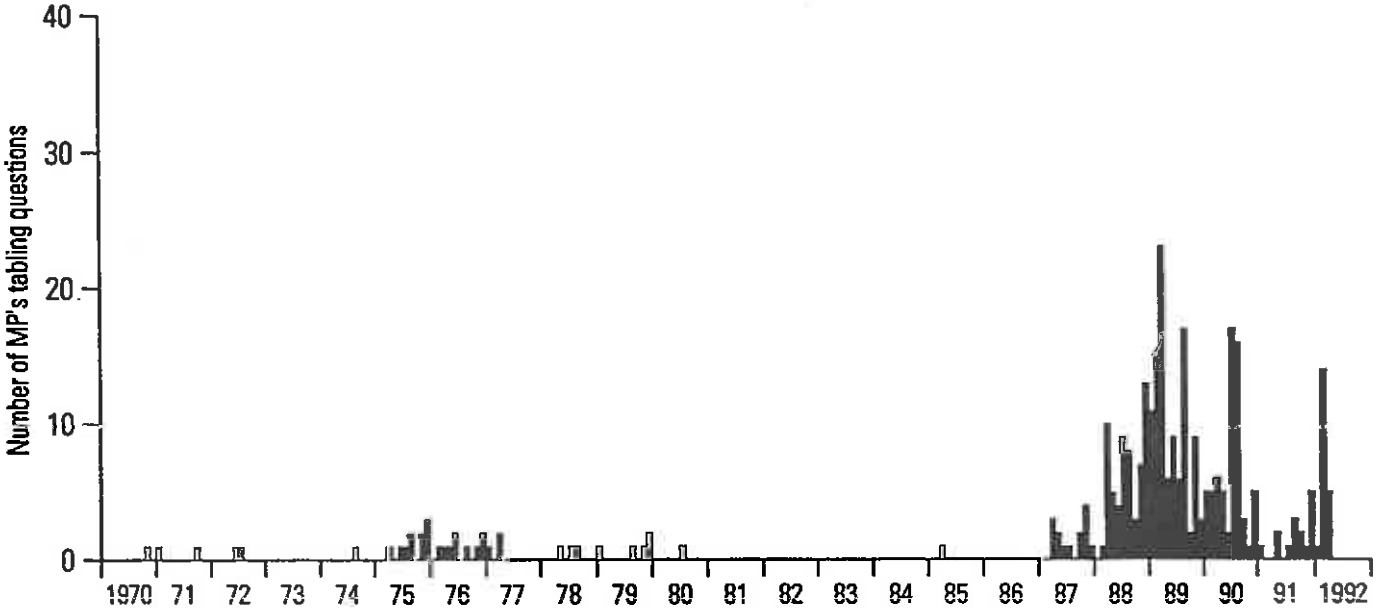
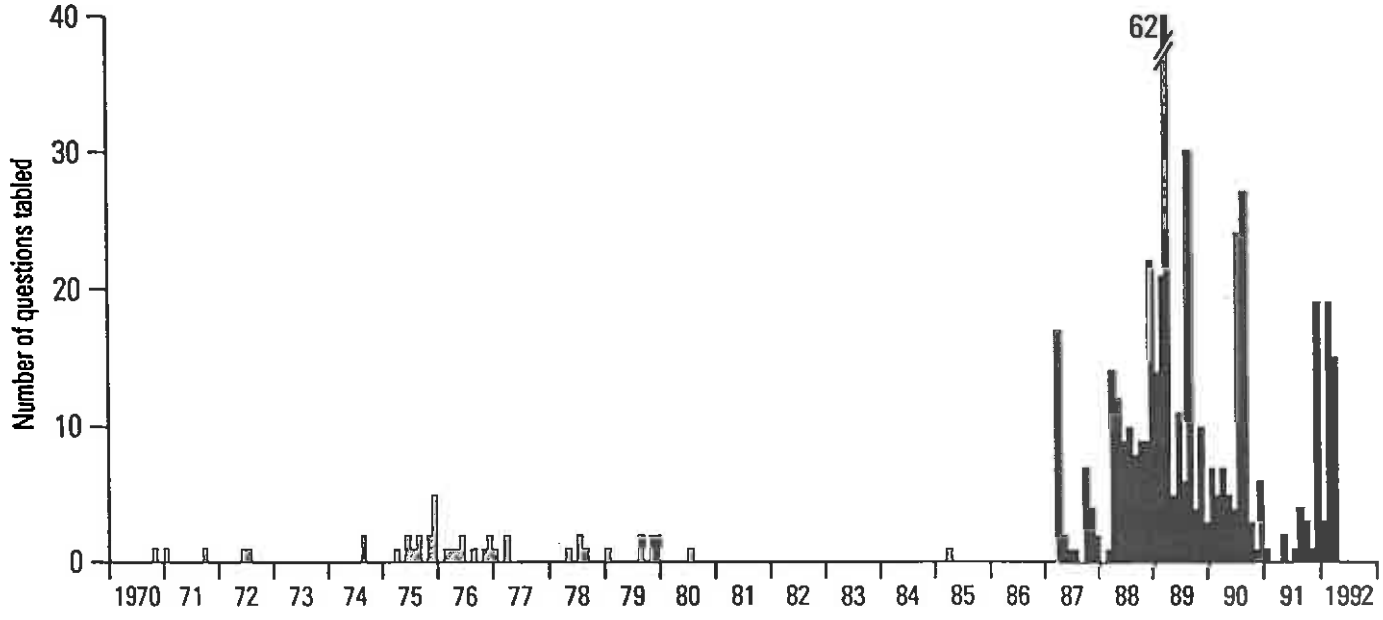


Figure 1b. Ozone and CFCs – Chronology of Parliamentary questions



NB: Only the ten months of the Parliamentary year (excluding August and September) are included here

Environmental Protection Bill (Hansard 138:729-44; 159:1301-67; 160: 129-52; 171:748-870). In addition there was an abortive attempt by Liberal Democrats to introduce the Chlorofluorocarbons (Control) Bill as Private Members' legislation. Such attention was not, however sustained. After a further short fallow period there are signs of a fresh revival starting in late 1991.

The pattern seems consistent with what is known of the general chronology of attention to ozone depletion in Britain, continental Europe and North America (Roan 1989, Park 1991, 23) (3). During the early 1970s supersonic aircraft were the first agents identified as potentially destructive of the delicate chemistry of the stratosphere. However, amidst the multitude of questions tabled about the costs of the Anglo-French Concorde project, and the noise associated with supersonic flight, no more than half a dozen raised concerns about the effects of engine emissions at stratospheric levels. Although some specific references were made to ozone depletion, less focused concerns were expressed about the impact of supersonic aircraft upon global temperature and climate (for example Hansard 806:400W; 823:227W). In reply Ministers from both the Heath and Wilson governments offered reassurances that officially sponsored British research and comparable evidence from Australia and the United States indicated that no significant consequences could be expected from the use of supersonic aircraft on the scale then anticipated (Hansard 837:203W; 839:116W; 888:124W). This aspect of the debate seems only to have made a minimal impact on the British Parliamentary record. The issue did resurface briefly

during the early 1990s amidst speculation about a second generation of supersonic aircraft but the few questions tabled were swamped by concerns about other more immediate sources of ozone depleting chemicals (Hansard 174:188W; 174:302-3W).

Attention to the destructive effects of CFCs, identified particularly as aerosol propellants, stimulated a rather more sustained series of questions during the later 1970s. However, these were countered by ministerial assurances that any effects upon human life would be inconsequential. In April 1976, for example, Environment Minister Denis Howell noted of the then projected increase for the next hundred years in ultra violet radiation reaching ground level:

> To put the matter in perspective, this would be equivalent to the increase in exposure incurred by a person moving from Northern England to the South Coast of England (Hansard 909:567W).

Almost identical phrases were reported in sections of the media as emanating from the Chairman of the Royal Commission on Environmental Pollution, Professor Hans Kornberg (New Scientist 1977). Such comforting ideas endorsed by sections of the scientific establishment both nationally and internationally, helped to defuse concerns about stratospheric ozone depletion. Indeed it seems to have been the case that European scientists were sometimes more reassuring about the future of the ozone layer than were many of their American counterparts (for example Lubinska 1985). Thus the issue had faded from the Parliamentary agenda by the early 1980s.

The revival of the later 1980s reflected the interacting stimuli of the discovery of the Antarctic ozone hole, the accelerating pace of international ozone diplomacy, Margaret Thatcher's endorsement of environmental concern and the increasing attention of the media to these scientific and political initiatives. Members also displayed a broadening awareness of the range of different sources of ozone depleting substances generated by modern consumer society. The previous concentration on aerosols gave way to a series of questions about the use of CFCs in refrigeration and air conditioning systems, and reference to the potential of damage to the ozone layer from sources as diverse as fire extinguishers, solvents, dry cleaning fluids and building insulation foam (Hansard 113:112W; 129:1100; 142:419W; 143:626W; 147:683W). Moreover, as attention shifted away from aerosol propellants as the major cause of concern increasing interest was displayed in prospects for the safe recovery, destruction or recycling of ozone depleting substances as a complement to moves to control production and use. Interest in stratospheric ozone subsided again during 1990, perhaps reflecting the repeated assurances that international regulatory action was successfully combatting the proliferating use of ozone depleting substances. However, fresh evidence revealing much greater erosion of the ozone layer than previously suspected, particularly in the northern hemisphere, contributed to the most recent upswing of interest during 1991 and 1992 (Hansard 200:428W; 203:432W; 203:506W; 204:62W; 204:412-3W).

Even in outline the recognition of an interacting system of

forces stimulating Parliamentary attention to stratospheric ozone depletion is instructive, not least when compared with the beguiling clarity of established models of opinion formation and the greening of politics. In this case it is hard to detect the pattern of events implied by a simple process response model; a sequential accumulation of pressures external to the political system triggered initially by public opinion and/or environmental crisis (Robinson 1992, 86). Notions of linear progression through stages of pressure and response seem a pale reflection of a complex reality. Moreover, there are clear signs of initiative as well as response from within the political sphere. Margaret Thatcher's endorsement of action on ozone depletion may in part have been a reaction to new certainties in the science of stratospheric ozone, but the search for political advantage was also a motivating force. Moreover, the personal involvement of the Prime Minister was a key factor in raising the Parliamentary profile of ozone depletion.

STIMULI TO QUESTIONING: SCIENCE, POLITICS AND OPINION

While the total number of questions tabled during the first cycle of concern about ozone depletion during the 1970s was small by comparison with later developments it is noteworthy that individual MPs, chiefly Labour Members, sought to draw attention to developments including those overseas in the spheres of research and regulatory action. The record of questions and other exchanges gives some indication of the information sources drawn on by MPs, thus introducing the results of scientific work into the Parliamentary record. The first reference to research

outlining the potential depletion of stratospheric ozone seems to have been made by Labour Member Tam Dalyell in October 1971 (Hansard 823:227W). Specific mention of the work of Johnston and Crutzen on the effects of emissions from supersonic aircraft was made during the following May (Hansard 837:203W; Crutzen 1970; Johnston 1971). In July 1974 the Labour Member Bruce Douglas-Mann tabled what appears to have been the first question concerning research on the role of CFCs in stratospheric ozone depletion. Douglas-Mann cited Molina and Rowland's paper in the journal Nature, published only days earlier and since recognised as a key research statement (Hansard 876:386; Molina & Rowland 1974). Reference to the work of these two American researchers was also made by Labour Member Joyce Butler in the adjournment debate on ozone depletion which she introduced in July 1975. Moreover, during this debate the role of liberated chlorine atoms in initiating a catalytic destruction of ozone was outlined (Hansard 896:2421).

Other Members contributing to this first cycle of interest drew attention to the response of the United States government and scientific establishment, particularly the Academy of Sciences, in investigating the science of ozone depletion and projected policy regulating use of implicated chemicals (Hansard 893:517W, 901:172W; 918:609-10W). By contrast during the later 1980s West Germany and Sweden were more frequently cited as international role models both for initiatives to ban the use of ozone depleting chemicals and for moves to facilitate the safe recovery and recycling of CFCs from sources such as refrigerants (Hansard

145:1017-8; 152:518W; 157:329-30; 164:529-30W; 168:343-4; 174:295W). From within the domestic sphere some Members were also explicitly drawing on material produced by various external interest groups; these included not only environmental organisations such as Friends of the Earth, but also industrial bodies including the Heating and Ventilating Contractors' Association and the Institute of Refrigeration. The last comprehensive survey of MPs' information sources conducted during the mid 1960s noted the role of such organised interest groups in supplying information to Members, a role which had doubtless expanded further by the late 1980s (Barker & Rush 1970, 34).

Scientific research and policy proposals published by various interest groups excited some interest from individual Members with a particular engagement with environmental or industrial matters. However, rather more general attention was devoted to the developing international efforts to regulate ozone depleting substances. It would appear that major diplomatic initiatives in this field could give the issue a particular but temporary prescience reflected in a burst of Parliamentary questioning. Members were not equally attentive, however, to all the major stages of ozone diplomacy. Early international initiatives during the 1970s and early 1980s attracted little or no Parliamentary attention despite the exchanges on concerns about ozone depletion and the calls for regulatory action by the British government. There is thus little evidence on this basis for pressure from within the House of Commons as a whole for greater British commitment to the emergent ozone diplomacy. Moreover, while later

developments occasioned significantly more interest amongst Members, their responses reveal an ambiguity between stated perceptions of ozone depletion as a truly global issue and the more parochial concerns of domestic politics. Thus while the international ozone conference of March 1989 and the second meeting of the parties to the Montreal Protocol of June 1990, both held in London, coincided with marked peaks in questioning by MPs the first and third meetings of the Protocol parties in Helsinki during May 1989 and in Nairobi during June 1991 respectively, prompted only one question apiéce (Hansard 154:83-4W; 193:518W). It was not only the location of the two former events in London that raised their political profile in Britain, it was also the involvement of Margaret Thatcher in sponsoring such activity as part of her new green strategy that helped to attract the attention of MPs.

While Mrs Thatcher's interest derived in part from a scientific background that made her unusual amongst MPs, there were also indications that she was acting as a "political entrepreneur" seeking to derive personal and party benefit from environmental initiatives (O'Riordan 1991, 307; Rush 1988, 22-8; Rowlands 1992, 306). Certainly there was praise for the Prime Minister and her Environment Secretary from the Conservative benches (for example Hansard 142:574-5; 148:752-3). Moreover, press coverage of the London conference of March 1989, particularly in the tabloid papers, inevitably placed Margaret Thatcher centre stage in reporting proceedings. There is little indication here, or in Parliamentary exchanges, of the wider perspective outlined by

Adamson that this gathering owed as much to the easing of international tensions in a world emerging from the polarities of the Cold War as it did to British government initiative (Adamson 1990, 3). There was, however, rather tart comment from Labour Member Rhodri Morgan who in noting the juxtaposition of Mrs Thatcher's keynote speech at the London conference and her refusal to attend the French inspired international environment summit at The Hague suggested that

> if she wants to be taken seriously in international environmental scientific collaboration to solve the environmental problems affecting this planet, she should not attend only conferences at which Mr. Bernard Ingham [the Prime Minister's Press Secretary] can control the television cameras (Hansard 147:1143W).

Similarly there was no consistency in the reaction of Members to scientific developments in understanding the causation and extent of ozone depletion. Initial reaction by Bruce Douglas-Mann to the publication of the work of Molina and Rowland in the summer of 1974 was rapid. It was thus an instance in which scientific research, rather than widespread popular interest or indeed proven environmental damage, formed the initial stimulus to a Member's interest (cf Robinson 1992, 84-123). Indeed Douglas-Mann's question predated any wider dissemination in Britain of scientific concern about the ozone depleting potential of CFCs through non-specialist scientific journals and the broadsheet press. Content analyses of the New Scientist and the Times/Sunday Times indicate that the first report in the former specifically

concerning the projected role of CFCs in ozone depletion appeared in September 1974, while no reference can be found in the latter until October 1975 (New Scientist 1974, Sunday Times 1975). It is perhaps instructive that public opinion and representations to Ministers and Members are not invoked as forces legitimating greater action to curb ozone depletion until the later 1980s (Table 3).

By contrast, later reports of thinning of the ozone layer over the southern pole generated a more ambiguous response. Its discovery by a team from the British Antarctic Survey in time became incorporated as a major British achievement in a rather paradoxical search for individual national kudos while responding to a truly global issue (Hansard 145:1018). There was also particular praise for the Antarctic Survey's findings in Mrs Thatcher's famous Royal Society speech of September 1988 (O'Riordan 1991, 179). However, when first revealed in 1985 the Antarctic ozone hole excited no Parliamentary questioning, with the first tentative reference coming only in 1987 (Hansard 112:405W). Later research indicating significant depletion of stratospheric ozone in the northern hemisphere seems to have sparked a much more immediate upsurge of interest from the later months of 1991 onwards. This reflects in part a heightened awareness of the general significance of ozone depletion, but concern seems also to have been generated by perceptions of a threat geographically more immediate to Britain. Thus Members' questions pursued the health risks associated with ozone depletion and increased exposure to ultra-violet radiation to a

level of detail hitherto unseen (Hansard 201:352-4W; 204:205W; 204:272W; 204:583-4W).

THE CONTENT OF QUESTIONING

It is perhaps surprising that questioning explicitly addressing the human effects of ozone depletion should form only a limited part of exchanges on this general issue, given politicians likely concentration on the applied aspects of scientific discoveries. However, a simple classification of the subject matter of the questions tabled reveals that very few were concerned with further understanding or publicising the human and environmental consequences of ozone depletion (Table 3). The harm potentially attributable to such changes appears either to have been taken as given, or mentioned only in passing, often in very generalised terms. Similarly, although perhaps less surprisingly, most questioners seem to have had little interest in the basic science underpinning the debate over ozone depletion. Only a small minority of questions required clarification of more detailed and abstract scientific points, such as those tabled by the Liberal Member Simon Hughes regarding the destructive potential of particular chemicals (for example Hansard 132:393W; 200:363-4W).

There is thus perhaps reason to doubt the level of understanding even of some of those most vociferous in pressing for government action to restrict the use of ozone depleting substances. However, this suggestion echoes one of the conclusions of a recent wider survey of environmental attitudes amongst the

TABLE 3: OZONE & CFCs - PARLIAMENTARY QUESTIONS - CLASSIFICATION BY SUBJECT MATTER

I) 1970-1980

SUBJECT	CON	LAB	LIB/ SDP	PC	SNP	SDLP	TOTAL
Research	9	13	2				24
General Policy		2	1				3
Science		3					3
International Action	4						4
National Action	3	8	1				12
Consequences	1	1					2
Specific Uses	1	2					3
Representations		1					1
Global Development							

II) 1985-1990

SUBJECT	CON	LAB	LIB/ SDP	PC	SNP	SDLP	TOTAL
Research	10	21	6	13			50
General Policy	4	7	4	2			17
Science	2	8	3	2			15
International Action	44	44	18	10		1	117
National Action	42	91	28	8	1	1	171
Consequences	1	3	1	1			6
Specific Uses	9	24	9	3			45
Representations	4	2		1			6
Global Development	1	4	4	1			10

III) 1991-92

SUBJECT	CON	LAB	LIB/ SDP	PC	SNP	SDLP	TOTAL
Research	2	5	4				11
General Policy		1					1
Science	2	2	3				7
International Action	5	5	3				13
National Action	1	12	7				20
Consequences		10	2				12
Specific Uses	1	9	2				12
Representations							-
Global Development		1					1

NOTES

1: Some individual questions covered more than one major theme and are thus recorded under more than one subject heading.

2: The criteria for classification of questions:

Research: enquiries about and calls for research - scientific and commercial - including calls for government support for research.

General Policy: requests for a general statement regarding government policy on ozone depletion, its causation and prevention.

Science: requests for information about the principles and details of the scientific understanding of ozone depletion.

International Action: requests for information about the progress of international regulatory activity and calls for (further) British participation.

National Action: calls for unilateral action by the British government.

Consequences: requests for information about specific terrestrial consequences of stratospheric ozone depletion.

Specific Uses: requests for information about specific uses of ozone depleting substances.

Representations: requests for information about public representations received by government regarding ozone depletion.

Global Development: requests for information about the impacts of regulation of ozone depleting substances and processes upon future socio-economic development in Third World contexts.

British public. It was noted that the identification of issues by scientific research and campaigning bodies

> has evoked a response among a population for whom a paucity of scientific knowledge is apparently no obstacle to growing feelings of concern and the corresponding belief that "something must be done" (Young 1991, 108).

While most Parliamentary questioners seem to have taken the basic scientific argument as given some did address its general characteristics in relation to their primary focus on the appropriate policy response. Thus particularly during the first cycle of concern exchanges between questioners and Ministers often highlighted the uncertainties of the new science of ozone depletion, giving contrasting interpretations of the policy implications of such characteristics.

For Joyce Butler in July 1975 the speculative nature of scientific understanding of ozone depletion, and the prospect of regulation in the United States, justified action to control the non-essential use of CFCs as an aerosol propellant:

> Probably all that we can say is that we know just enough about the upper atmosphere to know that we do not know nearly enough. But is this uncertainty any reason why we should continue to use fluorocarbons which may not be absolutely essential where there may be a risk involved? When the whole object is new and uncharted, surely we should be extra-specially careful (Hansard 896:2421-2).

On this and other occasions the government, in the shape of

Environment Minister Denis Howell, remained unconvinced. Comparison with the response in the United States was explicitly rejected:

> I understand that ... the United States government have set in hand work preparatory to such regulations. I do not consider that such regulatory action is needed here (Hansard 918:609-10W).

Given the potential economic costs of reducing or ending aerosol production, the technical difficulties of finding suitable replacements and the "reassuring" nature of some investigations of stratospheric ozone levels it was argued that further research should precede "immediate and precipitate" regulatory action (Hansard 876:386; 896:2428). Howell himself invoked scientific uncertainties, but to argue that

> Until these uncertainties have been resolved by further research ... firm conclusions about the need for controls on chlorofluorocarbons cannot be reached (Hansard 912:314-5W).

It is a measure of change to contrast these words with a statement from one of Howell's Conservative successors as Environment Minister. By the late 1980s much had altered; the discovery of the thinning of the ozone layer over the Antarctic had rendered scientific understanding less speculative and the international momentum for regulation had embraced Britain to the extent that the public face of policy articulated by Colin Moynihan was to

> welcome the fact that action was taken in international

> forums before the scientific data came along to demonstrate there is a major problem (Hansard 129:1100).

Although, as O'Riordan notes, the British government subsequently shied away from any general acceptance of the principle of precautionary action in the face of the threat of uncertain but potentially serious environmental degradation (O'Riordan 1992, 306).

The primary focus of attention in these and other exchanges remained, however, the political policy response either through unilateral national action, or increasingly, through active involvement with the new international ozone diplomacy. Over 70 per cent of questions tabled included requests for general statements of government policy, for reports on progress in implementing specific existing policies or calls for the adoption of new initiatives. The earliest calls during the 1970s were almost exclusively for the banning or curbing of the use of CFCs in non-essential aerosols (Hansard 893:517W; 899:696-7W; 901:460-1W; 912:314-5W; 918:609-10W). It was not until the 1980s that attention was paid on a more systematic basis to others amongst a widening range of chemicals and applications implicated in ozone depletion. Particular attention to the use of CFCs in refrigeration and air conditioning systems led to calls from 1988 onwards for government assistance in the establishment of recovery, recycling and disposal schemes (for example Hansard 139:313W; 139:395W). There was also a concomitant increase in interest in the development of alternative substances and processes to allow more environmentally neutral means of

delivering essential products. Again the principal focus was not scientific and technological innovation per se, but the role of government, actual and potential, in fostering such developments.

Members pursued government involvement with research into the basic science of atmospheric changes, the development of more ozone benign chemicals and schemes for recovery, recycling and increasing efficiency in the use of ozone depleting substances (Table 3). There were also exchanges about ways in which government might prompt action by other interest groups, particularly private industry. In large part, from the mid 1980s onwards, this was considered within the context of participation in the successive rounds of international ozone diplomacy which introduced progressively more restrictive regimes for production and consumption of ozone depleting substances. However, there were also exchanges over the responsibilities of individual national governments in creating the right climate of information and fiscal incentive to encourage initiatives from both industry and consumers (Hansard 149:65W; 200:461W; 202:239W; 203:972). In this way concerns about the global issue of ozone depletion became entangled with domestic ideological debate about the respective roles of private enterprise and government (cf O'Riordan 1992, 298).

THE INFLUENCE OF PARTY IDEOLOGY: STATE AND MARKET

In the case of ozone depletion as in many other matters Conservative governments of the 1980s and 1990s championed the cause of private enterprise as a more effective source of

positive initiative than regulation by individual states. Indeed Conservative Members in general placed less emphasis in their questioning on actual or potential action by national government than did Opposition MPs, particularly Labour Members (Table 3). In part this difference doubtless reflects a greater disposition on the part of the Opposition to contest the decisions of government, but there is also an underlying ideological difference in contrasting notions of the role of the state. Ministers argued that within the framework of tightening international regulation of their production and consumption the precise disposition of the continued essential use of ozone depleting chemicals could best be decided by market forces. Thus in replying to a call for the government to set a good example in the international sphere by implementing a tough national regulatory policy including the banning of CFCs in aerosols as soon as practicable Environment Secretary Nicholas Ridley stated that

> I do not believe that the right way forward is to ban the use of CFCs in one product or another. The right way is to restrict the total production of CFCs by very severe amounts... We will leave the market to discover how best to deliver that reduction rather then banning the use of CFCs (Hansard 145:1018).

Demands from Opposition Members (for example: Hansard 134:648-9W; 145:1018; 149:426W; 155:205-6W) for national initiatives to tighten the regulation of CFC uses, or ban them completely, were thus rejected and the Liberal-sponsored Chlorofluorocarbons (Control) Bill of 1989 failed to secure a second reading.

Even in the case, raised as late as 1989, of the continued use of CFCs as an aerosol propellant for novelty products including "Silly String" and "Christmas Snow" Ministers asserted the right of the market, and in particular the individual consumer, to decide the fate of a specific product (Hansard 163:754W; 164:91W). This enthusiasm for enlightened consumer sovereignty was, however, allied to voluntarism in spheres such as labelling of products containing ozone depleting chemicals. Opposition Members' proposals for mandatory schemes to ensure that consumers had the information on which to make environmentally informed choices were rejected (for example Hansard 129:1100; 129:647-8W; 132:371W 142:405-6W). Again participation in international regulatory agreements was used as an argument against other action; in 1987 Environment Minister Giles Shaw noted British participation in the discussions leading to the Montreal Protocol and added

> In these circumstances, I consider a requirement for labelling of aerosol cans to indicate that they contain chlorofluorocarbons would be otiose (Hansard 113:113W).

Ministers also argued that international regulation offered the best incentive for the development of alternative products and processes. Thus in July 1988 Industry Minister Humphrey Atkins noted that

> prices of the controlled CFCs are expected to rise as the [Montreal] protocol takes effect and this will encourage the development and adoption of substitutes (Hansard 136:539W).

Indeed, in response to pressure primarily, but not exclusively, from Opposition Members it was asserted that government had a limited role to play in assisting what was essentially a commercial process of research and development. Thus Members' suggestions of earmarked government funding to support such work were rejected (for example Hansard 131:438W; 143:726W). It was pointed out, however, that applications within existing funding frameworks would be favourably received with, for example, CFCs and their alternatives being one of the selected priority areas eligible for grant aid for research up to 'proof of concept' stage under the Department of the Environment's environmental protection technology scheme (Hansard 174:112W). Also abortive were attempts by the Labour spokesperson on Environmental Protection Joan Walley to solicit government support for proposals originating with one of the several industrial interest groups supplying information to Members, the Heating and Ventilating Contractors Association. Schemes granting fiscal incentives for investment in plant to facilitate recycling or safe destruction of CFCs, and a proposed levy on CFCs to fund the development of alternatives were both passed over by government (Hansard 149:65W; 182:940).

Conservative Members were generally supportive of initiatives taken by private industry in investing in new technologies and the development of alternatives to ozone depleting chemicals, sometimes almost to the point of imputing altruism rather than sound commercial decision-making. However, this is clearly an area in which the rhetoric of exchanges often reflected partisan

party and constituency interests. Conservative Member Michael Stern combined both in inviting praise for a company in his own constituency in its researches into substitutes for CFCs and in suggesting to the Environment Minister that

> rather than listening to the ritual kick at the chemical industry from the Labour Party, he should encourage the industry to do the research to bring in the necessary products to replace chlorofluorocarbon gases (Hansard 137:1082).

It is not without a certain irony, therefore, that some of the most impassioned championing of the chemical industry came from the Labour Member Gordon Oakes, who in representing the interests of a constituency which included the major ICI plant at Rock Savage expressed concern as late as 1988 that regulatory action inspired by speculative science might

> crucify a very useful industry on the grounds of what may have been a mistake (Hansard 137:327-8).

UNASKED AND UNANSWERED QUESTIONS

Even in less extreme cases the analysis offered of the role of industry seems often to have been no more extensive or sophisticated than the scientific knowledge displayed by the majority of Members. In part the tone of debate is a reflection of the structure of the questioning procedure which produces a series of discrete and disjointed exchanges rather than a sustained flow of argument. Even within these constraints, however, there seems to have been little attempt even to allude to the wider issue raised by the manifold uncertainties

surrounding ozone depletion. Whether in calling for further action, or in praising existing developments Members rarely if even addressed the potential authority of industry in influencing not only the commercial, but also the political agenda on stratospheric ozone depletion and indeed other aspects of global environmental change. There are some oblique indications of the power of the largest industrial concerns in the withholding by Ministers of basic statistics for British production of ozone depleting chemicals on the grounds of commercial confidentiality (for example Hansard 113:112W; 132:392-3W; 200:427-8W; 205:646-7W). But elsewhere industry is portrayed essentially as reacting to external events. It is sometimes vulnerable to international regulation, sometimes the needy recipient of government briefings and other assistance, sometimes triumphant in its scientific innovation; but rarely proactive, and certainly never manipulative. Clearly this is at odds with the evidence that the commercial priorities of ICI, in particular, have exerted considerable influence over the evolution of the stance of the British government on stratospheric ozone depletion (Ward et al 1990, 241).

In analysing the record of Parliamentary questioning, therefore, it is as appropriate to consider that which remains unexplored by Members as it is to explore that which they consider overtly. The power of the largest multi-national producers and consumers of ozone depleting chemicals and their alternatives to influence the regulatory agenda at both national and international levels receives no direct attention. Even its symptoms such as the

equivocal attitude of the British government to substitutes for CFCs, including HCFCs, which themselves have a clear ozone depleting potential, are passed over without detailed comment. Some attention is, however, drawn to differences between British attitudes and some of their European neighbours. The intention of the West German government to ban the refrigerant gas HFA22 is contrasted with the official British policy favouring its use at least in the short to medium term (Hansard 164:529-30W).

Moreover, there is little questioning of the larger rationale of the regulatory framework erected nationally and internationally to check ozone depletion. From the late 1980s onwards success is claimed almost entirely within the somewhat arbitrary framework of the Montreal Protocol whose terms Britain is seen as fulfilling with a speed and thoroughness that are cause for congratulation. There are few attempts, however, to gauge the actual effects of any changes in regimes of production and consumption upon the condition of stratospheric ozone. The Labour Member James Wray seemingly being unique in his questioning of the time taken by the stratospheric ozone layer to recover under the then prevailing regulatory regime (Hansard 143:346-7W).

Hence, an emerging sense of satisfaction during the late 1980s contrasts with the renewed concerns of the early 1990s which reflected fresh scientific evidence about the state of the ozone layer in the northern hemisphere. Even calls for change, tabled with increasing frequency in recent years, deal exclusively with matters of detail, pushing for the acceleration of the phasing

out of the use of particular chemicals or processes, rather than raising any real questions concerning the efficacy of such a response. Moreover, such points of detail can be parried by the very same institutional structures which they seek to modify; further national action by the government alone is inappropriate because ozone depletion is established as a global issue, while initial calls for tighter international curbs on the use of ozone depleting substances are deflected by claims that such actions would prejudice the major aim of increasing the number of states acceding to the Montreal Protocol (Hansard 145:1017-8; 137:1081-2; 137:1082-3).

Problems created unwittingly by the use of particular chemicals are prescribed a technological and regulatory fix which will obviate the need for more significant and far reaching changes in the style and pattern of human activity (cf Stern et al 1992, 59). Thus only individual details concerning the environmental implications of development are considered, as for example, with the attention to the implications of Third World development for the consumption of ozone depleting chemicals (Table 3). In a context where political pragmatism and the questioning of specific detail might be expected to take precedence over more philosophical contemplation of larger issues it is perhaps unsurprising that debate takes this form. However, there appear to be few alternative forums in which Parliamentarians collectively, and by extension those whom they represent, can consider the wider implications of the state of modern society and economy.

CONCLUSION: NATIONAL POLITICS AND GLOBAL ENVIRONMENT

Even this limited exploration of the interest in stratospheric ozone depletion manifest by a section of the British political establishment suggests a number of points in conclusion. It has been argued that both interest and understanding were partial. This goes beyond recognition of the limitations imposed by the fragmentary nature of exchanges through Parliamentary Questions. Members' preoccupation with the detail of government responsibilities and policies, while predictable, seems at odds with the need to debate the larger issues of scientific understanding, and the relative roles and power of the state and large-scale private industry in reconciling environmental and economic imperatives.

The exchanges were also partial in that they included the active involvement of only a minority of MPs. Indeed ozone depletion attracted questioning from only just over one third of those Members who claimed a special interest in environmental and ecological matters, based on listings in Dod's Parliamentary Companion (Bedford 1990). This is instructive in relation to the initial thesis of the need to unpick the various different interests conventionally grouped together under the "green" label. Amongst those tabling questions the majority added little that was new to the content of the debate, serving rather to keep the issue on the agenda, and in the case of some Conservative Members deliberately affording opportunities for Ministers to report on the "success" of their policies.

It is the very existence of debate, however, that is perhaps the most important point to emphasise. Moreover, this debate had a distinctive political dimension. Some previous attention to the greening of politics has focused principally on the means by which environmental issues enter the political agenda, considering ideology chiefly as an influence upon a party's amenability to the adoption of a green stance (Robinson 1992, 124-65). But we also need to consider the ways in which different party ideologies mould and reinterpret "greenness" to maintain consistency with their larger political vision. Within the arena of British politics discussion of ozone depletion was in part at least coloured by the wider ideological stances of the main parties, particularly during the 1980s and 1990s as they related to ideas about the respective roles of the state and the market.

Government policies and the attitudes of British representatives in the more widely studied spheres of international politics and diplomacy were thus not born of a domestic vacuum. Rather there was potential for interaction between debates conducted at national and international levels; each being informed and in part shaped by the other. Indeed it has been suggested that the new international diplomacy initiated by concerns about global environmental change should be viewed as but part of a two-level game (Stern et al 1992; Putnam 1988). If we are to understand this diplomatic "game", we must also pay attention to activity at the other level; within the national arena of the individual state. This is to distinguish between the apparent coherence of a national stance as articulated by government representatives

and the potential diversity of domestic opinion that may lie underneath. It is also to acknowledge that government policy may be intended to serve a variety of ends, both nationally and internationally. Thus for the British government participation during the 1980s and 1990s in international agreements to limit the use of ozone depleting substances offered not only a means of achieving an environmentally desirable end, but it also provided something of a defence against domestic pressures to take further action on this and indeed on other aspects of environmental concern. Certainly leading Conservatives defended themselves on a number of occasions from wide ranging attacks on their green credentials by instancing the success of initiatives taken to counter ozone depletion.

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NOTES

(1) This paper is part of a larger initiative exploring understanding of aspects of global environmental change which will pursue many of these interconnections in greater depth.

(2) In some cases general concern about CFCs may also have reflected their role as greenhouse gases implicated in global warming.

(3) The wider project underway at the University of Leeds will include more detailed analysis of the chronology and content of British press coverage of stratospheric ozone depletion.

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