

Final Submission to Journal of European Public Policy

**UP AND DOWN THE PECKING ORDER¹, WHAT MATTERS AND WHEN IN
ISSUE DEFINITION: THE CASE OF rbST IN THE EU**

DR CLAIRE A. DUNLOP (University of Exeter)

ABSTRACT

This article examines the nature and degree of control which powerful actors have over the process of issue definition. In particular, it explores the ways in which knowledge and time can mediate, condition and direct decision-makers' attention from one definition to another. The characterisation of the 'pecking order' is introduced to capture the process of re-definition around the biotech product bovine somatotrophin (rbST) in the European Union (EU). The movement of different interpretative dimensions of rbST up and down the pecking order is analysed through a synthesis of Haas's work on epistemic communities and Pierson's on issue feedback and conjunctures. This yields six propositions explaining the manner in which interpretations were prioritized and re-shuffled across the issue's lifespan. It is concluded that knowledge and time mediate choice by presenting decision-makers with opportunities to further their strategic aims and also, on occasion, by exerting independent force – particularly where knowledge is under development or an issue is caught up in a complex web of linkages.

KEY WORDS

Bovine somatotrophin (rbST); epistemic communities; feedback and conjunctures; issue definition; issue linkage.

INTRODUCTION

The study of issue definition has a distinguished pedigree in political science. The early pluralist bias of the literature has given way to an increasing number of studies in which the role of powerful actors in issue definition is finessed. In particular, the interceding forces of knowledge and time are reaching an increasing level of sophistication. Following this tradition, this article presents an account of issue definition in the European Union (EU) – exploring the nature and influence of epistemic and temporal forces upon the degree of control policy actors enjoy over issue definition. An analytical framework – a hybrid of Haas’s epistemic communities and Pierson’s work on feedback and conjunctures – is deployed to trace the many definitions which became attached to the genetically modified milk aid bovine somatotrophin (rbST) in the EU across the 1980s and 1990s. The definitional journey of rbST is characterised by the idea of a temporally contingent ‘pecking order’ where supranational institutional actors engaged with the various pieces of knowledge around rbST to determine *what* mattered in the regulation of this substance and *when*. This yields six observations concerning the nature and power of the epistemic and temporal forces which mediate the issue definition process and condition decision-makers’ control over it. The article demonstrates that while policymakers do have the ultimate power to determine an issue’s definition, over time forces related to knowledge development and issue linkage may have considerable independence in shaping these choices.

The article proceeds as follows. Section one locates the article in the issue definition literature and unpacks the idea of the ‘pecking order’. Section two introduces the

empirical case and the Haas-Pierson analytical framework. In section three the empirical case study of rbST in the EU is detailed and used to explore the nature of the definitional pecking order. The results of this are reported in section four which outlines six propositions to explain the manner in which interpretations were placed and re-shuffled on the pecking order. The article concludes that while policymakers have the ultimate power to determine an issue's definition, over time endogenous forces – in particular those relating to knowledge development and issue linkage – may have considerable independence in shaping these choices.

1. ISSUE DEFINITION AND THE DEFINITIONAL PECKING ORDER

Early studies of issue definition were underpinned by a pluralist focus, where the 'definition of alternatives' (Schattschneider 1975 [1960]: 66), in terms of policy solutions, was the ultimate prize up for grabs and issue definition characterized as a zero-sum game generating winners and losers. Over the past three decades this power approach has been tempered by studies adopting a more nuanced approach focussed upon the actual manner in which problems are defined and re-defined (Dery 1984; Hisschemoller and Hoppe 1995²; Rochefort and Cobb 1994) and agendas controlled (Cobb and Elder 1975; Cox and McCubbins, 2005). More recently, the notion of issue definition as an iterative process has been developed further – with the role of knowledge in the expansion or contraction of Schattschneider's 'scope of conflict' problematised (Fischer 2003; Jones and Baumgartner 2005; Rein and Schön 1994; Stone 1989) and the importance of temporal forces in which definitions prevail over others re-discovered (Baumgartner and Jones 1993).

The central aim of this article is to contribute to the ongoing enquiry of asking *what matters* and *when* in issue definition. Issue definition is viewed as a process in which decision-makers' choice are mediated. This paper gauges the extent to which powerful policy actors are actually able to control the definition and re-definition of an issue with particular consideration given to the role of knowledge and timing in conditioning and bounding these choices. Here an issue's substantive and temporal make-up are conceived of as more than simply goods at the disposal of interest-based policy actors with a policy solution to promote and policy actors not merely instrumental processors or political exploiters of information.

The aim is not simply to bring knowledge and timing centre stage but to dissect them as variables. In this way the substance of the definitions which can become attached to issues across time, and the junctures at which these evolve and modify, are examined forensically. It is worth emphasising that the approach taken here is far from apolitical. Few would argue against the fact that policy choices are the bottom line in policy-making and that political actors are the main players in issue definition. These are taken as givens. However, by directing attention to the knowledge which is used by policy actors to define an issue and pin-pointing the timing of these choices the research presented here enables close scrutiny of the control that policy actors exert.

The article maps this process of re-definition across time by deploying the 'pecking order' characterisation. Any given issue may be defined across multiple dimensions. This

polymorphic and polytypic potential enables policymakers to choose the dimension they wish to focus attention on over another. The definitional ‘pecking order’ assumes a local rationality: at any given point and in any given place one definition may be higher than others on the pecking order of an issue. Thus, the order is fluid and can be a repository for an unlimited number of definitions. Definitions will move up, down or remain stationary according to the attention that powerful policy actors afford them. This article presents an analytical framework to map the movement of these definitions on the pecking order across time, examining the way in which decision-makers engage with and react to forces of knowledge and time to promote a favoured definition.

2. THE EMPIRICAL CASE AND ANALYTICAL FRAMEWORK

This article presents a detailed account of issue definition where the definitions political actors attached to an issue are examined primarily through the knowledge types and components that exist around the issue itself. More specifically, it discusses the case of the agricultural yield enhancer bovine somatotrophin (hereafter rbST) in the EU. Analysis is informed by a ‘process-tracing’ approach (Berman 2001; George 1997) with the account informed by actors’ perceptions of rbST reconstructed using interview data³ and official documentation. This issue’s definitional journey spanned over a decade from 1987 when the first license applications were made until 1999 when the EU formally banned its production and marketing. However, this brief summary belies a highly complex story.

rbST is a genetically modified milk aid. In short, bovine somatotrophin is a naturally occurring substance that, with the advent of biotechnology in the 1970s in the United States (US), could be synthetically produced for the mass market of dairy farmers. After an extensive empirical product evaluation by the US Food and Drug Administration (FDA), rbST was approved in 1993. The contrast in rbST's fortunes in the EU could not have been starker. The product's launch coincided with the introduction of milk quotas and widespread concern in Europe with the use of hormones in meat. This unfavourable climate ensured that rbST was never likely to be licensed. Moreover, with no Community-level risk assessment protocol, rbST emerged into a regulatory vacuum where scientific evaluation gave way to political debate and socioeconomic imperatives.

Though rbST was subject to various re-definitions at no point did these changes trigger or reflect any change in the preferred policy solution. So why bother to dig any deeper? If the policy decision did not alter, then any change in rbST's definition may appear inconsequential. The view taken here is that the rbST case illustrates that in issue definition there can be more at stake than policy decisions. As an archetypal 'trans-scientific' issue (Weinberg 1972), rbST furnished EU policymakers with a considerable set of definitional options from which to pick at any one time providing an excellent exemplar of how pecking order analysis might operate. Allied to this, the EU's firm policy stance muffled the pluralist bargaining noise around rbST significantly. This enables the isolation of knowledge and time inputs, bringing into relief their role as goods to be exploited by decision-makers and also their capacity to, on occasion, bound decision-makers choices in ways they do not entirely choose.

Conceptually, analysis is informed by two approaches. The first of these is Peter M. Haas's epistemic communities framework (Haas 1992). More specifically, the conceptualization of knowledge found in Haas's work is used to illuminate the multi-dimensional nature of issues. Haas breaks down knowledge as a policy input into the constitute parts that go into the definitional mix of an issue, conceptualizing knowledge as comprised of four components: normative and principled beliefs; substantive notions of cause and effect; empirical notions of validity, and practical policy proposals (Haas 1992: 3).

Taken together these components represent the belief system around which amalgams of transnational experts or 'epistemic communities' can form, thus fostering international policy co-ordination. The analysis presented here dispenses with the 'anthropomorphic' (Radaelli 1997: 169) aspect of the thesis. While groups of experts undoubtedly deliver knowledge to the policy process (particularly in the technocratic EU) and can be significant players therein, the search for such a community is not the aim of the research presented here.

Rather, the focus is on the knowledge inputs to issue definition, with Haas's four epistemic components serving a heuristic purpose. Zooming-in on these enables an accurate identification of the pieces of evidence that captured EU decision-makers' attention and moved up the pecking order. Focusing upon the nuts and bolts of an issue's

evaluative dimensions also enables us to identify any instances where knowledge itself pushed decision-makers into reactive positions and in doing so altered the pecking order.

Issue definition does not take place in a vacuum; definition formation is an interactive process interceded by policies and events from the past, present and in the anticipated future. Shifts in an issue's definitional pecking order must also be seen as temporally contingent. The fact that time matters in the policy process is not, of course, a new discovery. Scholars from policy studies (Baumgartner and Jones 1993; Lindblom 1968) and International Relations (IR) (Stern and Sundelius 1992⁴) have long known the importance of feedback and sequencing in issue definition. This article follows this logic, foregrounding the timing of definition and re-definition to uncover why certain pieces of knowledge about rbST were privileged and moved up the pecking order, while others were passed over or relegated.

These temporal dynamics are explored, and the definitional pecking order explained, using Paul Pierson's work on the role of feedback loops (both positive and negative) and event conjunctures in politics (Pierson 2000). Three of Pierson's main arguments inform analysis:

1. *Self-reinforcing sequences* – Pierson draws on the work of economist Brian Arthur (1994 in Pierson 2000) concerning positive feedback and increasing returns. The hypothesis presented is a simple one where 'initial moves in a particular direction encourage further movement along the same path' (Pierson 2000: 74). Thus an initial position can set the trajectory for the future.

2. *Non-reinforcing dynamics* – Pierson notes that the influence of past events can also be negative, stimulating a chain reaction that may go against the original grain or involve some form of adaptation to ensure that an original goal is met.
3. *Historical conjunctures and critical junctures* – Pierson argues that events (often unrelated) can arrive at the same historical moment interacting to affect the future course of political action. This coincidence of events may conspire to produce unanticipated events and mark turning points in the political process (Collier 1993 in Pierson 2000: 87).

Accordingly, analysis of decision-makers choices around rbST is guided by two sets of analytical questions. The first concern the knowledge dimension of issue definition:

1. how do the various knowledge inputs which surround an issue interact to form the interpretations that make up an issue's definitional pecking order?
2. how much agency does knowledge itself have relative to policymakers in dictating the undulations of an issue's definitional pecking order?

The impact of feedback and conjunctures is examined through two questions relating to both endogenous and exogenous forces found in the policy process:

1. what forces generate feedback sufficient to influence an issue's definitional pecking order?
2. can apparently unrelated issues or events alter the pecking order or even the definitional path of an issue?

3. rbST'S DEFINITIONAL PECKING ORDER IN THE EU

While the policy decision was fixed from the start rbST's definition was not; with the decision to prohibit the substance becoming the object of a range of definitions. This section outlines rbST's definitional narrative in the EU which spanned more than a decade. The story is structured chronologically (as far as possible) into three distinct definitions phases. In each of these, a different element of what was known about rbST was pushed to the top of the pecking order – figures 1, 2 and 3 provide schematic illustration.

Phase 1: Issue pre-definition and the role of empirical evidence

As has been intimated, from the outset rbST was perceived in negative terms in the EU. The first Commission communication of September 1989 (Commission 1989a) made explicit its policy preference to prohibit the use of rbST in the Community. The cause and effect logic of rbST was obvious – as a yield enhancer it would boost milk production into even greater surplus (Commission 1989b) and de-stabilize the already enervated Common Agricultural Policy (CAP) (Commission 1989a).

The first definition attached to rbST reflected these economic concerns with the Council of Ministers agreeing that any consideration to license its use should be suspended until after an 'assessment period'. During this time – which was extended until December 1991 – a programme of socioeconomic assessments confirmed the Commission's worst fears (Commission 1992). The CAP, as it stood, could not withstand the introduction of a quantitative yield enhancer and it was probable that widespread use of rbST would

precipitate the collapse of the milk quota regime. As a result, a moratorium was placed on rbST timed to coincide with the first assessments of the Community's milk quotas at the end of 1993.

A standard study of issue definition might well stop at this point. The policy definition–policy solution link was clear and left little scope for political bargaining. In such circumstances issue re-definition appeared unlikely and moreover inconsequential. Indeed, while there was lobbying from the biotech and veterinary product groups based in Brussels and Washington they were well aware that the task of changing the Community's policy stance was tantamount to turning around a juggernaut. However, with the luxury of hindsight, it is known that rbST stayed on the formal agenda in the EU for more than a decade, and while the policy decision never faltered, the issue's definition did change in both subtle and dramatic ways.

Here these changes are illuminated through a deeper examination of what was known about rbST before the first economic definition came to predominate. By unpacking the issue's past in this way many other interpretations of rbST are found to have been in circulation and a definitional 'pecking order' discerned (see figure 1 for a summary).

The European Parliament (EP) placed rbST on the formal agenda. More specifically, the Parliament's Agriculture and Environment Committees insinuated themselves into the gap left by the absence of statutory Community-wide system to regulate either veterinary medicinal or biotech products. These committees were quick to include the milk aid

within their wider investigation of ‘agricultural production aids’ which had been ongoing since 1980. In March 1988, the results were published in a two-volume report (EP 1988a, 1988b). On rbST, two categories of concern dominated. The first asked questions of economic need and, at a more fundamental level, normative questions asking whether or not the Community wanted such a product. The second concerned what was known in terms of natural scientific evidence about the safety of rbST.

The arguments rehearsed in the EP committees are worth examining. They reveal the multiple knowledge types of which rbST was comprised and, accordingly, the variety of definitions which made it onto the original pecking order. It is this set of interpretations which was juggled by policymakers throughout the rest of the issue’s lifespan.

Taking the questions of need and want first, two knowledge elements were conjoined. While the economic case against rbST dominated the Parliament’s view, allied to this were normative concerns. The committees’ reports, a parliament debate and an early ‘own initiative’ report (EP 1988a, 1988b, 1986 respectively) all stressed that even if rbST did not break the milk quota regime its introduction would demand a fundamental restructuring of the Community dairy sector⁵ incommensurate with the rural ‘European way of life’ (EP 1988a) and the Community’s Treaty of Rome obligations within the CAP to ‘safeguard the ... traditional agricultural structure and their economies of scale’ (Article 39 in EP 1988a).

The scientific evidence on rbST, and its safety for consumers, was also examined by the Parliament's committees (EP 1988a, 1988b). The Environment Committee gave particular attention to the concerns of one US public health expert. Veteran campaigning scientist Dr Samuel Epstein challenged manufacturers with the theory that rbST would stimulate the production of a compound called insulin growth factor-1 (IGF-1) in milk which, if consumed in large quantities over time, is associated with various cancers in humans (Epstein 1988). The committee's report acknowledged that the IGF-1 thesis was based upon an untested hypothesis, with only a little conjectural evidence to substantiate it, and was not supported by the empirical consensus constructed around the manufacturers proprietary evidence that rbST was safe for humans. However, this lack of hard evidence did not prevent it emphasizing the importance of consumers' potential perceptions of safety, even in the absence of empirical actuality.

In the Commission, DG III for Industry⁶ (DG Industry hereafter) followed suit. While the IGF-1 thesis was mentioned in its first communication, the human health definition was presented as relevant by virtue of the more socially informed theme concerning consumer perception. It was in this trans-scientific form that this empirical evidence was granted pecking order status – albeit at a low level.

A similar interpretation was set by the Parliament's Environment Committee with regard to the evidence that rbST might have a deleterious impact upon the administered animals. Again the scientific consensus pointed toward product safety. However, some trial data did indicate that rbST might increase the mastitis levels in dairy cows, a condition which,

in extreme cases, is associated with animal burn out and shortened life expectancy (Kronfeld 1987, 1988).

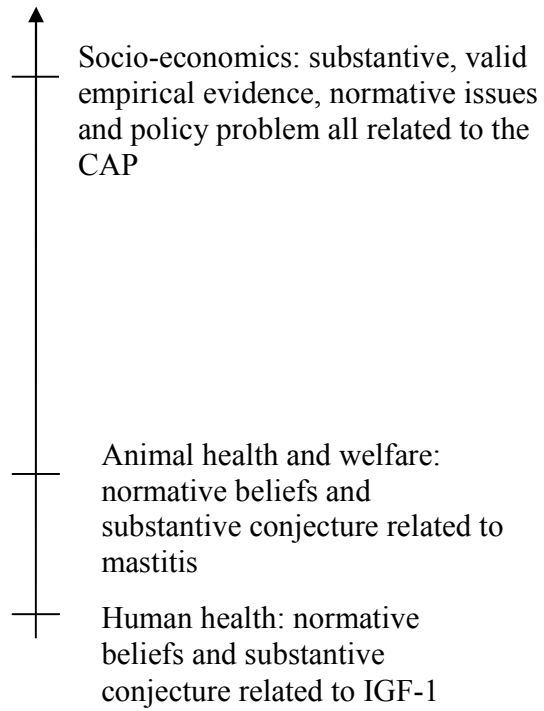
The evidence at that time, though it was certainly firmer than that which existed on IGF-1, still only amounted to a collection of anomalies. However, again the EP committee and then the Commission eschewed using this evidence in its conjectural form, preferring to attach to it the normative theme of animal welfare and practical policy concerns about the consequences for milk quality should farmers go beyond the recommended dosage. The trans-science option was selected, with empirical evidence used only to inform a definition of rbST in conjunction with more socially informed themes.

This privileging of trans-scientific arguments is reflected in a debate led by Environment Committee chair Ken Collins concerning how to regulate high-tech products, such as hormone growth promoters and rbST, which also carry substantial socioeconomic implications. Collins argued that rather than be assessed by the standard three scientific criteria, concerning product safety, quality and efficacy, a '4th hurdle' be introduced to ensure that a product's risks in socioeconomic and consumer terms be considered in decision-making (Collins 1991; EP 1988b, 1989, 1990).

Collins intended this to be a solution that would provide manufacturers with a transparent regulatory system. It would also ensure that the Community was not bound to the empirical form of risk assessment typified by the US 'red book' (National Research Council [NRC] 1983) which exhorts deference to scientific consensus regardless of the

political implications. The 4th hurdle, though taken seriously within the Commission where it was lent credibility through the support of DG Agriculture (Commission 1990), was ultimately rejected. This ended the Parliament's involvement on rbST. DG Industry, which had taken the lead on rbST, preferred a far less prescribed approach, arguing that in non-routine trans-scientific cases the Commission 'reserved the right ... to take a different view in light of its general obligations to take into account other Community policies and objectives' (Commission 1991: 3).

Figure 1
rbST's Pecking Order
Phase 1: Issue pre-definition and the role of empirical evidence



Phase 2: Issue re-definition – promoting the normative and empirical

Despite the dominance of the economic definition of rbST and the fact that the moratorium's continuation beyond 1993 appeared little more than a formality, rbST's definition pecking order was still in motion. The period before the end of 1993 brought a re-shuffling of this order with the rise of interpretations concerning animal health – in terms of the empirical evidence on mastitis – and rbST's welfare implications – underpinned by normative questions of animal rights and sentience. This change in definitional direction was signalled by the DG Industry in 1992 with the request of an opinion from the newly formed Groups of Advisers on the Ethical Implications of Biotechnology (GAEIB). This body judged rbST to be ethically sound (Commission 1993b: 3) and the mastitis levels detected to be within an acceptable range. Indeed, the only action point related to consumer confidence with the suggestion that, in the interests of transparency, manufacturers should look into the possibility of labelling the milk yielded via rbST.

Across the Commission, this clean bill of health was unwelcome if not entirely unexpected. However, the fact that the animal health and welfare side of rbST were being considered in such serious terms is significant in its own right. It reflects the wider view evolving within DG Industry regarding the types of knowledge and evidence that might inform the regulation of high-tech products. The involvement (and indeed the creation) of the GAEIB bolsters the view that a renegotiation of the type of knowledge inputs that should be privileged was occurring within the EU at this time. This represents an entrenchment of view identified in the first definitional strand of rbST as a trans-

scientific issue about which it was entirely legitimate to ask non-empirical, normatively informed questions, which were underpinned by empirical or substantive facts – be that in terms of economics or animal health.

The trigger to this ethical investigation can be found in the 1991 product reviews given by the Commission's competent body the Committee of Veterinary Medicinal Products (CVMP) (Commission 1992: Annexes 1 and 2). The CVMP gave rbST the all-clear across the three scientific criteria of safety, quality and efficacy. On mastitis it was made explicit that while a causal relationship between rbST and increased incidence was apparent, this evidence was not firm in case numbers and so lacked validity. Thus rbST was deemed safe, with a note of caution on mastitis levels sounded. The CVMP advised that dosage control mechanisms be put in place and so guarantee that any incidence of mastitis would fall within the normal range by the inclusion of a 'structured programme of pharmacovigilance' as part of rbST's licensing package in Europe (Commission 1992: 6).

DG Industry's response was swift. Emphasizing the non-binding status of the CVMP's scientific assessment it opted instead to focus upon the management stipulations laid down by the CVMP. rbST was increasingly appearing undesirable in health and welfare terms but moreover was problematic in management terms (Commission 1992) implying 'substantial changes in current management practices' that would reduce rbST to being available by veterinary prescription only (Commission 1992: 6).

Thus the normative focus on animal welfare and empirical evidence on mastitis was expanded further to include the policy implications of having to monitor the impact of rbST upon treated animals. This extension had the effect of raising the barrier against rbST higher still. The need to monitor animal health and welfare was presented by the Commission as impractical, entailing pharmacovigilance costs which would be prohibitively expensive and deracinate the original design of the product (Commission 1992). This in turn would discourage use of rbST, making it a product without a market.

The elevated position of this combined normative-empirical and policy definition of rbST was sealed in the two proposals outlining the case to extend the moratorium until the millennium (Commission 1993c, 1993d). In policy terms, this timing was explained as coinciding with the second set of milk quota assessment. In definitional terms these documents make it clear that the extension of rbST's ban was not simply on the familiar economic grounds. The risk management demanded by rbST's normative and health implications for animals formed the centre-piece of the proposals and, despite the CVMP's distinct lack of equivocation, the Commission recommended further animal safety related studies.

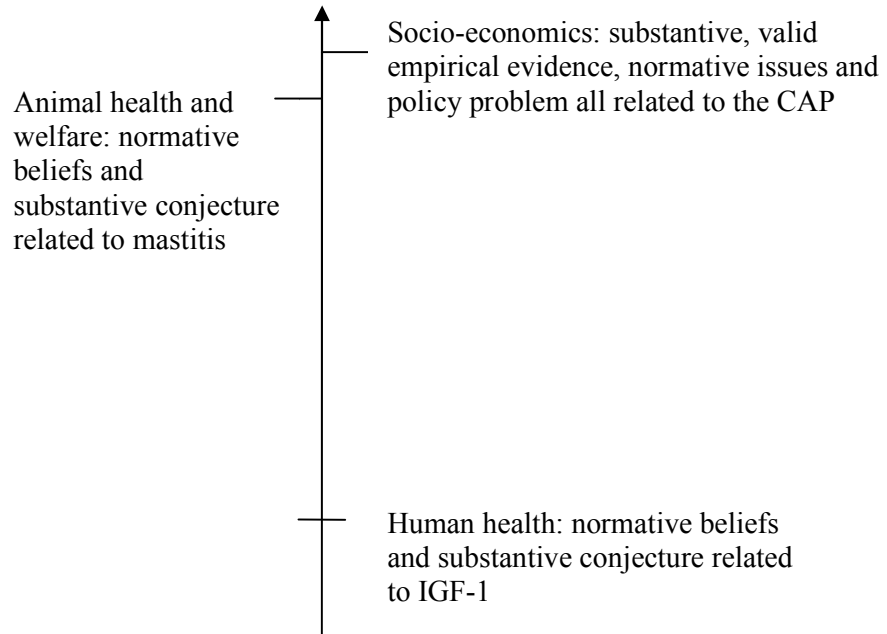
After a one-year delay, the moratorium was set until 2000. This promotion of empirical, scientific knowledge did not amount to a replacement of the clear economic consensus against rbST. The pecking order characterisation suggests that several interpretations and definitions can co-exist, where some will inevitably be higher placed than others for a time. Thus while the animal health and welfare definition edged into the spotlight in the

early 1990s, the economic one had not disappeared from the stage – as figure 2 illustrates.

Figure 2

rbST's Pecking Order

Phase 2: Issue re-definition – promoting the normative and empirical



Phase 3: Issue resolution and the (re)habilitation of scientific evidence

This boost in the fortunes of scientific, empirical knowledge continued after 1994. And in October 1999, when the Commission's newly empowered DG XXIV for Health and Consumer Protection (DG Sanco hereafter) announced its intention to propose a permanent ban on rbST (Commission 1999c) this was on the basis of the scientific evidence on mastitis and animal welfare and supported by the still conjectural IGF-1 thesis and doubts it cast over the safety of rbST milk for humans.

The evidence presented by the Commission centred upon the opinions of two newly created supranational scientific committees. The first report by the Scientific Committee on Animal Health and Animal Welfare (SCAHAW) advised that the evidence on mastitis was now sufficiently valid to extrapolate causality and represented the beginnings of a scientific consensus (Commission 1999a). The Commission continued to link this empirical evidence with the Community's own normative and policy commitments on animal welfare, referring in particular to the 1997 Treaty of Amsterdam's Protocol on animal welfare expanding supranational competence in this area. The second scientific contribution, made by the Commission's Scientific Committee on Veterinary Measures Relating to Public Health (SCVPH), concerned what was known about the IGF-1 thesis and, in particular, the studies that appeared to add weight to Epstein's cancer postulate (Commission 1999b). While this report acknowledges that the evidence on IGF-1 was thin – in terms of both validity and the more basic issue of cause and effect – it concluded that additional exploration of the conjectural evidence was required to prove that rbST

milk would not stimulate cancers in humans. Given this, rbST should not be licensed for use and research on its effects should continue.

In contrast to previous actions in both hormone growth promoters and rbST, the Commission adhered to the recommendations of its two scientific committees in their entirety. This willingness to push the interpretation of rbST as a threat to human health up the pecking order marked a notable departure. Despite the fact that the evidence was highly conjectural and contrary to the advice of the Commission's own product review body CVMP (Commission 1992, 1993a, 1999d) and the international scientific consensus (Food and Agriculture Organization [FAO] 1993; Joint FAO/WHO Expert Committee on Food Additives [JECFA] 1998) DG Sanco deployed a precautionary approach, placing the onus on rbST's manufacturers and the US regulator to prove the negative.

In addition to this use of empirical evidence, the production of these scientific opinions marked a totally new form of engagement between the Commission and scientific knowledge. The previous two definitional strands indicate that substantive evidence from the natural sciences – whether conjectural or consensual – was treated as either beside the point or useful only when allied to normative or social knowledge. The movement of this natural scientific empirical knowledge up the rbST definitional pecking order was made possible by a new suite of scientific committees created within DG Sanco in 1997 in response to the Bovine Spongiform Encephalopathy (BSE) crisis (Commission 1997).

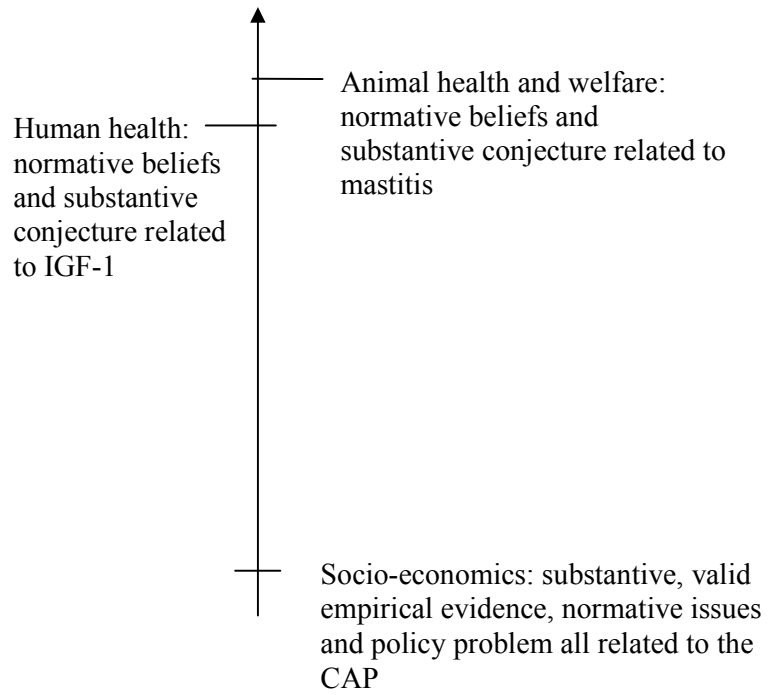
The changed status of empirical evidence in the case of rbST reflects the wider evolution in the relationship between the supranational policymakers and scientific evidence. It should be noted that this evolution did not amount to a new approach to this knowledge. The strict empiricist approach which predominated in the US was not being pursued. Rather in the rbST case, in line with the path set by hormone growth promoters, scientific opinions were produced and used on DG Industry's terms. These terms emphasized DG Industry's determination to plough its own furrow in risk assessment – where the trans-scientific nature of some policy issues makes non-scientific, social and normative evidence and arguments as legitimate as 'hard' natural scientific data. This rejection of the US paradigm is illustrated by one of the 1999 rbST report preambles: 'risk assessment rationale is not simply defined as a technical exercise', but rather is a 'task attributed to science from society' (Commission 1999b).

Significantly, these two reports were not simply for EU consumption. They were a key part of the Commission's defence in the long anticipated international trade dispute with the USA. In this respect, the Commission used its ongoing experience at the dispute settlement proceedings at the World Trade Organization (WTO) over hormone growth promoters to guide it in the types of standards that were scientifically justifiable in banning rbST.

In 2000 the US signalled that it no longer intended to take the dispute over rbST any further. The dénouement toward which the rbST controversy had been working for over a decade in the EU did not come and the issue died with more of a whimper than a bang. In

1999 the Codex Alimentarius (the United Nations [UN] body which oversees scientific standards on foodstuffs) failed to offer a unanimous endorsement of the consensus on the safety of rbST milk for humans. Even with the scientific consensus fractured a US victory at the WTO over rbST was still likely. However, a successful outcome and retraction of the EU ban would not logically follow. By taking the further legal action required to challenge EU intransigence the US would have incurred costs disproportionate to rbST's market worth⁷.

Figure 3
rbST's Pecking Order
Phase 3: Issue resolution and the (re)habilitation of scientific evidence



4. EXPLAINING rbST'S PECKING ORDER

This article awards special attention to the knowledge inputs and interpretations that develop around an issue gaining prominence or falling into obscurity over time. A wide variety of knowledge components existed around rbST making possible a wide range of definitions. Digging deeper into the position occupied by these in the pecking order illuminates issue definitions as the products of complex interactions of political power with knowledge and time. This final section crystallises some of the key observations about the way in which the trade-offs and choices of EU decision-makers were mediated by these forces, observations which further pecking order analysis might develop into firmer, more specified hypotheses.

The 'what': knowledge complexity, component interaction and a trans-scientific pecking order

Observation 1: definitions that appear on the pecking order are commonly amalgams of knowledge components constructed by policymakers. Supranational policymakers actively engaged with rbST's knowledge components, expressing their policy preferences by making and creating links between the various elements. rbST's multi-dimensional nature offered decision-makers exploitable political opportunities. For example, in the face of an early scientific consensus on safety, EU policymakers had the material to construct an alternative trans-scientific interpretation which encapsulated the economic and normative threats the product posed to the Community.

Observation 2: knowledge components may develop independently of political actors, forcing decision-makers to react creatively. As has been noted, decision-makers were central to the construction of definitions around rbST. However, in certain instances knowledge did have the upper hand, in particular mediating the definitional combinations which were possible. The knowledge development over mastitis and IGF-1 placed decision-makers on the back foot, leaving them to react creatively. For example, on mastitis causal empirical postulates could only be used to best definitional effect when combined with agreed notions of validity – something which was only possible over time as further research was conducted. The importance of this combination is highlighted by the fact that, prior to the SCAHAW report, normative concerns were evoked alongside the conjectural cause and effect empirical evidence to boost its validity. The evolution of mastitis and IGF-1 evidence enabled DG Sanco to re-define not only rbST but also the terms of its international engagement on the issue.

The endogenous ‘when’: policy linkages, positive feedback and ‘European standards of appropriateness’

Observation 3: issue linkages can create pre-definitions and generate positive feedback which decision-makers may not always choose though can exploit. That the formal agenda contains issues, old and new, between which there are links is not a new discovery. This, of course, is the stuff of the ‘crowded policy space’ (Hecló 1975). Here, this crowding resulted in the definitional motifs which had developed around one issue ‘rubbing-off’ on a new inhabitant of this space. While decision-makers engaged with the linkages which cut through rbST they did not necessarily always choose them.

From the outset, rbST was caught up in a wider sequence of events concerning the form which risk assessment should take and in particular the place which natural scientific evidence should occupy in any burgeoning supranational regulatory system. A key marker of this was the stance taken by the Parliament and Commission to ban hormone growth promoters, where a definition based on consumer confidence had been preferred to the scientific consensus on safety developed by the Commission's own group of advisers.

The linkage of rbST to the hormones saga was critical in setting policymakers' 'cognitive mindsets' (Pierson 2000), pre-defining rbST and setting its future trajectory. More specifically, the family resemblance between the issues, their temporal proximity and the absence of a regulatory structure enabled the two EP committees and DG Industry to use their ready-made expertise and well developed interpretations to build arguments over the form which Community risk assessment should take.

Pierson points out that, in such cases, where policymakers have the requisite power to construct the 'standards of appropriateness' (Mahoney 1997 in Pierson 2000: 77) positive feedback is likely to result. The generation of this feedback was typified by the '4th hurdle' concept (Collins 1991), the Commission's April 1991 communication (Commission 1991) and the ethical turn in the 1990s marked by the GAIEB enquiry (Commission 1993b). This feedback is also indicative of how 'locked-in' to the trans-scientific interpretation of rbST the EU had become. Empirical knowledge (consensual or

otherwise) was not, on its own, viewed as offering any ‘viable alternative’ (Pierson 2000: 609) and was relegated to the lower divisions of the pecking order for much of rbST’s early years.

Observation 4: decision-makers can use issue linkages to generate learning that orders movement up and down the pecking order. Lessons were also generated as the returns increased from hormone growth promoters to rbST (see Arthur 1994 in Pierson 2000: 76). Both the initial relegation of the scientific evidence and its later rehabilitation mirrored precedents set in the hormones controversy. EU decision-makers seized upon opportunities to draw lessons. Notably, in the 1997 WTO hormones dispute settlement proceedings the Commission’s strategy had been to gather and present its own scientific evidence questioning the safety of growth promoters in beef, attaching to these wider ethical and social issues. Though defeated in legal terms, the WTO Appellate Body conceded that the Community’s risk assessment need not always be restricted to empirical evidence as conceived by the USA (WTO 1998). Despite having lost and being ordered to pay trade concessions to the US and Canada, the EU was not forced to change its position, but rather was to provide more empirical evidence. This production and deployment of empirical evidence alongside social arguments was an exemplar for action from which the Commission sought lessons and adjusted its own operating procedures to build an empirical and social case against rbST for the anticipated international showdown.

The exogenous ‘when’: adaptation pressures and critical junctures

Observation 5: external expectations can re-focus decision-makers' attention and alter the definitional pecking order over time. Economist Brian Arthur suggests that in the face of continuing pressure policymakers will aim to minimize any drawbacks that they anticipate their position may incur in the future (1994, in Pierson 2000: 77). The sustained US demands that the EU to live up to its WTO commitments to justify the decision to ban in scientific terms represents this type of non-reinforcing dynamic. The threat of international censure contributed to the Commission's incremental adaptation of its stance, where definitions informed by natural scientific evidence became realigned and moved up the pecking order.

While this indicates a definite compromise in the EU's control over rbST's definition this should not be overstated. The nature of the reaction indicates that the EU used the time it had to gradually finesse its stance on empirical evidence around rbST. By exploiting the production of new knowledge around mastitis and IGF-1, as well as the Appellate Body's ruling on hormones, the Commission ensured that this negative feedback did not subvert its starting point and that the overall thrust to ban rbST's use remained viable. Thus through reaction and forced re-definition decision-makers can still find enough scope to defend established policy decisions.

Observation 6: temporally concurrent and seemingly unrelated events can represent 'critical junctures' in the promotion of one definition over another. The lessons drawn from the hormone dispute at the WTO and consistent US pressure ensured that the need to give empirical evidence a place in rbST's definition had been gradually internalized in

the EU before any threat of international action. And so, the shift in the fortunes of empirical science up the pecking order signalled by the 1999 reports was not a sudden event. However the Commission's ability in practical terms to build an internationally credible scientific case against rbST owed much to the post-BSE reform of scientific advisory system. This (re)organization of scientific advice created, for the first time, a supranational infrastructure which could produce empirical evidence guided by terms of enquiry set by a DG whose first priority was consumer health. The power to direct knowledge interpretation in this way ensured that risk assessment could be conducted according to the 'standards of appropriateness' prevailing in DG Sanco and the Community at large, standards which included trans-scientific as well as empirical evidence.

Again this exogenous factor is of a lower order in terms of influence. Commission officials and scientific committee members did report that the BSE crisis and institutional reform which followed had strengthened their resolve to take a trans-scientific, precautionary view in cases like rbST. However, in this case the influence of this reform was far greater in terms of the practical facilitation of definitional change as opposed to any direct interpretative effect.

CONCLUSION

It should go without saying that the pecking order moves to a rhythm arranged largely by decision-makers. However, by focussing upon powerful actors' interaction with some of the key factors which mediate issue definition, this case illustrates that the power to

control where attention is directed and which definitions win-out is not entirely unfettered. The re-shuffles of rbST's definitional pecking order were neither the result of uninhibited political will nor were they random uncontrolled events.

Decision-makers must cut their definitional cloth according to their means. The rbST case reveals that knowledge and time conditioned these means by providing opportunities for purposive engagement and also presenting more compromising situations which demanded creative reaction. While the former infers a higher degree of control than the latter it does not necessarily follow that purposive engagement by decision-makers will always produce more favourable results than unanticipated instances to which decision-makers must react under pressure.

On purposive engagement – knowledge and time most commonly condition choice by presenting decision-makers with exploitable goods with which they can engage in a strategic way. The rbST story is replete with examples of where such opportunities were taken. In departing from the scientific consensus on safety a trans-scientific definition was not simply attended to, rather it was consciously crafted. Similarly, Commission officials proved adept at engineering and drawing lessons from the growth promoters issue and engaging with exogenous pressures in a manner which secured the EU's policy stance to prohibit rbST, in both interpretative and practical terms.

However, well-placed institutional policy actors may not always have the upper hand. This case indicates that while decision-makers create definitions this is not always as they

wish⁸. On occasion, they have to react creatively to ungovernable, unanticipated events – in this case concerning knowledge development and feedback from endogenous linkages. As the examples of mastitis and IGF-1 illustrate, knowledge as an input can mediate the definition process in a powerful way, preventing certain evaluative dimensions from opening-up and definitions from flourishing. EU decision-makers responded creatively to a timetable of knowledge development that they themselves could not always control by downgrading these causal claims about rbST until any claims to empirical validity could be made. Feedback from linked issues can also exert an independent force upon issue definition. The simultaneity of rbST with the hormone growth promoters issue and the wider debate stimulated by the Parliament on the place of empirical knowledge in product regulation created the cognitive boundaries within which the Commission and rbST became locked.

Finally, in terms of applicability, the fusion of Haas's epistemic communities and Pierson's work on sequencing opens up new analytical possibilities for future empirical research in issue definition. While the findings presented here are intimately related to the rbST case, this analysis does have implications for a wide range of policy issues and for analysts in the EU and beyond. The idea of a definitional pecking order fits the contemporary reality of the crowded policy space, where multidimensional issues spillover, feedback and link-up to condition the control which decision-makers can exert over how an issue is defined.

Address for correspondence: Claire Dunlop, Lecturer in Public Policy, Department of Politics University of Exeter, Amory Building, Rennes Drive, Exeter, EX4 4RJ, UK.
email: c.a.dunlop@exeter.ac.uk

ACKNOWLEDGEMENTS

This paper is based on doctoral research funded by Economic and Social Research Council (ESRC) studentship R00429834387. Previous versions of this paper were presented as part of the Exeter University GRiP seminar series and at the ECPR joint sessions in Nicosia 25-30 April 2006. The author is grateful to the participants of workshop 12 (on ‘The Comparative Dynamics of Problem Framing: How Science and Power Speak to Each Other’) for their constructive comments and feedback. Particular thanks are extended to Frank Baumgartner, Bruce Doern, Peter Haas, Oliver James, Bryan Jones, Yannis Karagiannis, Sebastiaan Princen and Claudio Radaelli and two anonymous referees for their helpful suggestions. The usual disclaimer applies.

NOTES

¹ With acknowledgement and apologies to Anthony Downs (1972).

² I am grateful to one of my anonymous referees for suggesting this reference.

³ The author conducted 38 semi-structured interviews with active and retired scientists, civil servants, politicians and interest group actors.

⁴ I am grateful to one of my anonymous referees for suggesting this reference.

⁵ At that time, over half of Community dairy farming was comprised of small holdings (i.e. ten cows or less) – a yield enhancer which would drive down prices would hit these farms hardest (EP 1988a, 1988b).

⁶ This is now known as DG Enterprise and Industry.

⁷ The value of rbST exports have been estimated at under \$25million (Vogel 1995: 173).

⁸ This has been adapted from a similar assertion made by Adler and Haas concerning the capacity of epistemic communities to create reality (1992: 381).

REFERENCES

- Adler, E. and P.M. Haas (1992) 'Conclusion: epistemic communities, world order and the creation of a reflective research program', *International Organization* 46(1): 367-390.
- Baumgartner, F.R. and Jones, B.D. (1993) *Agendas and Instability in American Politics*, Chicago, IL: University of Chicago Press.
- Berman, S. (2001) 'Ideas, norms and culture in political analysis', *Comparative Politics* 33(2): 231-250.
- Cobb, R.W. and Elder, C.D. (1975) *Participation in American Politics: The Dynamics of Agenda-Building*, Boston, MA: Allyn and Bacon.
- Collins, K. (1991) *The Fourth Hurdle: Expressions of Public Concern Over the Safety of Food and Pharmaceuticals*, Shandwick Seminar, European Parliament in London, 18 January, 1991.
- Commission of the European Communities (1989a) *Proposal for a Council Decision Concerning the Administration of Bovine Somatotrophin (BST)*, COM (89) 379, September, Brussels.
- Commission of the European Communities (1989b) *Report on the State of the Community Dairy Market*, Luxembourg: Office of Official Publications of the European Communities.

Commission of the European Communities (1990) *Draft Proposal for a Council Regulation Concerning the Use of Certain Substances and Techniques Intended for Administration and Application to Animals to Stimulate their Productivity*, DG VI 3670/90-Rev.1, Brussels.

Commission of the European Communities (1991) *Promoting the Competitive Environment for the Industrial Activities Based on Biotechnology Within the Community*, SEC (91) 629, April, Brussels.

Commission of the European Communities (1992) *Second Report from the Commission to the Council and to the Parliament Concerning BST*, SEC (91) 2521, January, Brussels.

Commission of the European Communities (1993a) *Veterinary Medicinal Products Containing Bovine Somatotrophin: Final Scientific Reports of the Committee for Veterinary Medicinal Products on Two Applications for Marketing Authorization Submitted in Accordance with Directive 87/22/EEC*, CEC DGIII/C/3, Summary Document, February, Brussels.

Commission of the European Communities (1993b) *Opinion of the Group of Advisors on the Ethical Implications of Biotechnology to the European Commission: The Ethical Implications of Performance Enhancers in Agriculture and Fisheries*, SEC (93) 8286, March, Brussels.

- Commission of the European Communities (1993c) *Communication from the Commission to the Council and European Parliament Concerning Bovine Somatotrophin (BST)*, COM (93) 331, September, Brussels.
- Commission of the European Communities (1993d) *Proposal for a Council Regulation Amending Decision 90/218/EEC Concerning the Placing on the Market and Administration of Bovine Somatotrophin (BST)*, COM (93) 605, November, Brussels.
- Commission of the European Communities (1997) *Consumer Health and Food Safety*, COM (97) 183, 30 April, Brussels.
- Commission of the European Communities (1999a) *Report on Animal Welfare Aspects of the Use of Bovine Somatotrophin*, March, Brussels.
- Commission of the European Communities (1999b) *Report on the Public Health Aspects of the Use of Bovine Somatotrophin*, March, Brussels.
- Commission of the European Communities (1999c) 'Commission proposes ban on bST', IP/99/798, October, Brussels.
- Commission of the European Communities (1999d) 'No need for maximum residue limit of risk-free rbST', IP/99/954, Brussels.
- Cox, G. and McCubbins, M.D. (2005) *Setting the Agenda: Responsible Party Government in the U.S. House of Representatives*, Cambridge: Cambridge University Press.

Dery, D. (1984) *Problem Definition in Policy Analysis*, Lawrence, KA.: University Press of Kansas.

Downs, A. (1972) 'Up and down with ecology: The issue-attention cycle', *The Public Interest* Summer: 38-50.

Epstein, S.S. (1988) 'bST: the public health hazards', *The Ecologist* 18(4): 128-129.

European Parliament (1986) *The Effects of the Use of Biotechnology on the European Farming Structure*, A2-159/86 / OJ C 76/22, March, Brussels.

European Parliament (1988a) *Hormones and the BST Hormone in the Dairy and Meat Industry*, A2-30/88 / PE 115.204/fin, March, Brussels.

European Parliament (1988b) *Opinion of the Committee on Environment, Public Health and Consumer Protection to the Report by Mr José Happart of the Committee on Agriculture, Fisheries and Food*, A2-30/88 / PE 115.204/fin Part B, March, Brussels.

European Parliament (1989) *Committee of Inquiry into the Problem of Quality in the Meat Sector*, A2-11/89/Annex PARTS A-B / PE 130.073/fin./Annex, March, Brussels.

European Parliament (1990) *Opinion of the Committee on Environment, Public Health and Consumer Protection on the Commission Proposal for a Regulation to Lay Down a Procedure for the Establishment of Tolerances for Residues of Veterinary Medicinal Products*, A3-050-1/90 / PE 134.349-50, February, Brussels.

- Fischer, F. (2003) *Reframing Public Policy*, Oxford: Oxford University Press.
- Food and Agriculture Organization (FAO) (1993) *Residues of Some Veterinary Drugs in Animals and Foods: Bovine Somatotrophins*, FAO, 41/5: 113-142.
- George, A.L. (1997) 'From groupthink to contextual process analysis' in P. d'Hart, E. Stern and B. Sundelius (eds) *Beyond Groupthink*, Ann Arbor, MI: University of Michigan Press.
- Haas, P.M. (1992) 'Introduction: epistemic communities and international policy coordination', *International Organization* 46(1):1-36.
- Heclo, H. (1975) 'Frontiers in social policy in Europe and America', *Policy Sciences* 6(4): 403-21.
- Hisschemoller, M. and Hoppe, R. (1995) 'Coping with intractable controversies: The case for problem structuring in policy design and analysis', *Knowledge and Policy* 8 (Winter): 40-60.
- Joint FAO/WHO Expert Committee on Food Additives (JECFA) (1998) 'No danger to humans from milk and meat from bST-treated cows', 1 March, Geneva: WHO.
- Jones, B.D. and Baumgartner, F.R. (2005) *The Politics of Attention: How Government Prioritizes Problems*, Chicago, IL: University of Chicago Press.
- Kronfeld, D.S. (1987) 'The challenge of bST', *Large Animal Veterinarian* December: 14-17.

- Kronfeld, D.S. (1988) 'Biologic and economic risks associated with use of bovine somatotrophins', *Journal of American Veterinary Medicine Association* 192(12): 1694.
- Lindblom, C.E. (1968) *The Policy-Making Process*, Englewood Cliffs, NJ: Prentice Hall.
- National Research Council (1983) *Risk Assessment in the Federal Government: Managing the Process*, Washington, DC: National Academy Press.
- Pierson, P. (2000) 'Not just what, but when: Timing and sequence in political processes', *Studies in American Political Development* 14(1): 72-92.
- Radaelli, C.M. (1997) *The Politics of Corporate Taxation in the EU: Knowledge and International Policy Agendas*, London: Routledge.
- Rein, M. and Schön, D. (1994) *Frame Reflection: Toward the Resolution of Intractable Policy Controversies*, New York, NY: Basic Books.
- Rocheffort, D.A. and Cobb, R.W. (1994) *The Politics of Problem Definition*, Lawrence, KA: University Press of Kansas.
- Schattschneider, E.E. (1975) [1960] *The Semi-Sovereign People: A Realist's View of Democracy*, Hinsdale, IL: The Dryden Press.
- Stern, E. and Sundelius, B. (1992) 'Managing asymmetrical crisis: Sweden, the USSR and U-137', *International Studies Review* 36(2): 213-239.
- Stone, D. (1989) 'Causal stories and the formation of policy agendas', *Political Science Quarterly* 104(2): 281-300.

Vogel, D. (1995) *Trading Up*, Cambridge, MA: Harvard University Press.

Weinberg, A. (1972) 'Science and trans-science', *Minerva* 10: 209-22.

World Trade Organization (WTO) (1998) *EC Measures Concerning Meat and Meat Products (Hormones): Report of the Appellate Body*, AB-997-4, Geneva.

8495 words (excluding biographical note)

26/06/2006

BIOGRAPHICAL NOTE

UP AND DOWN THE PECKING ORDER, WHAT MATTERS AND WHEN IN ISSUE DEFINITION: THE CASE OF rbST IN THE EU

Claire Dunlop is a lecturer in public policy at the Department of Politics, University of Exeter, UK.

Dr Claire A. Dunlop

Lecturer in Public Policy

University of Exeter

Department of Politics,

Rennes Drive,

Exeter, UK

EX4 4RJ

c.a.dunlop@exeter.ac.uk

Telephone (+44) (0)1392 264690

Fax (+44) (0)1392 263305