

Epistemic communities and two goals of delegation: hormone growth promoters in the European Union

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The delegation literature tells us that decision-makers delegate power to agents to achieve efficiency or credibility (or both). Critically, however, the successful delivery of each of these implies very different levels of control over their agent by the principal. This paper deploys principal-agent modelling to explore how this logic works with epistemic agents. It explores the implications of two epistemic communities' contrasting *de facto* independence from European Commission decision-makers for the delegation goals satisfied in formulating policy on hormone growth promoters. Analysis supported the view that to deliver policy efficiency an epistemic community must have low autonomy from the political principal. Policy credibility was achieved when decision-makers selected an epistemic community whose views were socially legitimate.

DECISION-MAKERS DELEGATE POWER to agents with at least one of two objectives in mind: efficiency or credibility (Majone, 2001; 2005: Chap 4). This paper's point of departure is that the ability of epistemic communities to create knowledge, which is at once socially relevant and imbued with scientific credibility, gives these actors the unique potential to deliver on both goals. Principal-agent analysis is used to illuminate what epistemic communities offered when decision-makers in the European Commission (EC) were attempting both to ban the use of hormone growth promoters in meat and the import of treated meat and to prove

their long-term commitment to a precautionary approach to food safety.

Decision-makers may seek efficiency and credibility simultaneously. However, the delegation literature suggests that the successful delivery of each implies very different levels of principal control over their agent. For policy efficiency, a close alignment between the preferences of the principal and agent is expected. But societal confidence that a plan for the future is made before that future arrives and that a policy will continue in the long term, and is therefore credible, requires that the agent remains aloof from today's political principals whose temporal horizons are short term. Thus, this paper is centrally concerned with the implications of an epistemic community's autonomy from decision-makers for the advice they give and, critically, the delegation goals they are able to satisfy. This is explored by comparing the contributions made by two scientific working groups to whom the EC delegated for advice on growth promoters.

These committees are conceptualised as two distinct epistemic community types, each distinguished by the level of operational and informal autonomy they enjoyed from their political principals. We know that epistemic communities were originally conceived as naturally evolving, self-regulating

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enclaves of experts (Haas, 1989; 1992a). Such ‘evolutionary’ epistemic communities demand high levels of *de facto* autonomy from the decision-makers who call upon them for advice (see Maggetti (2007) for an excellent discussion on *de facto* versus formal autonomy). In the burgeoning epistemic communities literature, however, an additional type of expert enclave has also become apparent. Some epistemic communities exist whose members have been deliberately selected by decision-makers and whose day-to-day work is closely controlled and prescribed (Verdun, 1999). Such ‘governmental’ epistemic communities’ control over the knowledge they produce is circumscribed and subject to external socio-political pressure. What is the impact of these different levels of independence, and the degrees of autonomy they imply, upon epistemic agents’ abilities to deliver efficiency and credibility for their principals? Two main postulates, derived from the assumptions of the delegation literature, are examined. First, ‘governmental’ epistemic communities, whose *de facto* autonomy is limited, will offer more efficient delegations than their ‘evolutionary’ counterparts. Secondly, the ‘evolutionary’ agents’ fuller *de facto* independence from decision-makers makes them better able to secure credibility for a policy than their ‘governmental’ counterparts. Analysis supports the expectation that governmental epistemic communities produce more efficient delegations than their evolutionary counterparts. The hypothesis on policy credibility, however, is not supported. Rather, the case study analysed here suggests that an additional social dimension of policy credibility, emphasising the degree of value alignment between the expert agents and wider society, warrants further attention.

This research makes four contributions. The paper is situated within the growing EU literature deploying agency analysis (e.g. Pollack (1997) and Franchino (2002) on the EC; Ballman *et al.* (2002) on comitology; Egan (1998) on standardisation bodies and Blom-Hansen (2005) on cohesion policy). Despite this healthy corpus of work, less attention has been given to the application of agency logic to the advisory relationships between experts and decision-makers in the EU (a notable exception is Elgie (2002) on the European Central Bank), although a growing interest in the framework in science and public policy studies suggests that crossover to the EU literature is only a matter of time (*Science and Public Policy* has been at the forefront of this agenda, see Guston, 1996, 2003;

Braun and Guston, 2003 (special issue in this journal)). This paper contributes to this trend by applying principal–agent analysis to those groups of experts in the EU delegated to most numerous¹ but whose role remains surprisingly opaque, the EC advisory committees (for the beginnings of a literature see Christiansen and Larsson, 2003; Rhinard, 2002; Quaglia *et al.*, 2008).

Related to this, the present paper’s second contribution is to explore hypotheses on credibility delegations. While the translation of efficiency studies of industrial organizations into political science has reached an advanced stage, the application of the monetary literature on policy credibility to theoretical and empirical questions in political science has only just begun. This paper examines the orthodox thesis which links policy credibility to agent autonomy: a view that is increasingly actualised in the proliferation of independent regulatory agencies (IRAs) (Gilardi, 2002; Maggetti, 2007; van Thiel, 2004). Analysis suggests that explanations which articulate a ‘social logic’ (McNamara, 2002) for credibility by emphasising the importance of social legitimisation in delegation design and in the type of agent independence which prevails, require further attention.

The third contribution concerns the epistemic community concept itself (Haas, 1992a). Despite being *the* conceptual name to drop in studies of technical issues in comparative politics and international relations alike, very little work has been done to interrogate and develop the concept theoretically.² The use of principal–agent modelling enables a move away from simply examining experts’ role in filling knowledge deficits to viewing them as policy actors engaged in politicised relationships with decision-makers. In this way, analysis attends to the potential political impacts these communities can have and the instrumental uses to which their reputations and knowledge are put.

The paper’s fourth and final contribution is empirical. Drawing upon in-depth interviews with scientists and EU officials, the less well-known side of the high-profile hormone growth promoter controversy, concerning the delegation to experts for advice and construction of regulatory science, is revealed.

The remainder of this paper is structured as follows. The first section outlines the epistemic community concept addressing why and how decision-makers delegate to them. The second section delineates two types of epistemic community (governmental and evolutionary) distinguished by their levels of *de facto* autonomy from decision-makers and outlines hypotheses on what each community type offers decision-making principals in terms of efficiency and credibility. The third section considers case study evidence, which is analysed in the next section. The conclusion discusses the paper’s implications for the literatures on the epistemic communities and on delegation.

(What) do decision-makers delegate to epistemic communities and why?

Before dissecting the delegation goals and the possible contributions that epistemic communities make toward their achievement, we should first be clear about what actually constitutes an epistemic community and what they can offer decision-makers. An epistemic community is a group of professionals with a legitimate claim to highly specified policy-relevant knowledge on scientifically complex issues. Such communities embody a belief system around an issue which contains four knowledge elements:

[1] a shared set of normative and principled beliefs, which provide a value-based rationale for the social action of community members; [2] shared causal beliefs, which are derived from their analysis of practices leading or contributing to a central set of problems in their domain and which then serve as the basis for elucidating the multiple linkages between possible policy actions and desired outcomes; [3] shared notions of validity – that is, intersubjective, internally defined criteria for weighing and validating knowledge in the domain of their expertise; and [4] a common policy enterprise. (Haas, 1992a: 3)

This is an anthropomorphic conceptualisation of knowledge (Radaelli, 1997: 169) where those who carry the ideas are central to the analysis; ‘ideas would be sterile without carriers’ (Haas, 1992a: 27). Thus, to identify an epistemic community is to identify a set of actors with the professional and social stature to make authoritative claims on politically pertinent and socially relevant issues of the day. These claims find expression through a blend of substantive knowledge (elements [2] and [3] of Haas’s definition) and socio-political convictions (elements [1] and [4]) resulting in policy-relevant knowledge (Haas, 1992a).

Decision-makers have access to a huge amount of information. However, policy-oriented knowledge from authoritative actors is a scarce resource. By virtue of the useable knowledge they produce,

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epistemic communities possess a rare product which decision-makers need to transcend the two classic dilemmas of efficiency and credibility. This paper’s starting point is that, decision-makers have significant incentives to institutionalise these actors in bureaucracies. This usually takes the form of advisory committees. Thus, the relationships between these actors can be conceptualised as being between principal and agent.

Before outlining hypotheses of how epistemic communities contribute to the two delegation goals, the view that decision-makers and epistemic communities can be bound together in delegation relationships requires elaboration. Three issues require particular attention:

- the point at which decision-makers delegate to epistemic communities;
- the type of agents these collectives represent; and
- the type of power that is delegated to what are essentially advisory bodies.

We must establish under what conditions we would expect decision-makers to depend upon an epistemic community. Identifying what motivates decision-makers to delegate in the first place tells us about the strength and longevity of principals’ commitment to their relationship with an epistemic community. Decision-makers have a variety of reasons for consulting epistemic communities, some more political than others (Haas, 1992a: 15). Where substantive and political uncertainty is high, experts can delineate cause-and-effect relationships and help define states’ interests. In such cases, we would expect the delegation to be short-lived. After an initial peak, the decision-making principals’ dependence on an epistemic agent would decline as substantive enlightenment progresses and political preferences become clearer.

However, scope conditions exist which demand less one-sided, transitory relationships. Decision-makers also require epistemic communities for instrumental purposes to help formulate policies to legitimate fixed political preferences (Haas, 1992a: 15). Such delegations are particularly common where issues are marked by distributional consequences that put pressure on decision-makers to negotiate high levels of conflict in order to deliver policy commitments to favoured groups or to justify themselves to losing constituencies. Here, epistemic communities and their knowledge product become transformed into the political tools which principals need to shut down unfavourable policy options.

Epistemic communities can also depoliticise decision-making. In situations where decision-makers need to convince citizens of their commitment to a policy stance whose benefits in the future outweigh those of the present, epistemic communities carry the brand of objectivity and neutrality. By delegating to them for policy advice, decision-makers re-assure sceptical citizens and lend credibility to their commitment to a policy stance.

In examining the type of agents that epistemic communities represent we need to know about these groups' commitment to their policy role. Given that these experts are not employed by governments, why would epistemic actors accept a contract to offer advice to principals who are not legally bound to follow it? Put simply: what incentives do epistemic communities have to become agents?

The two sides of these actors' belief systems suggest that epistemic communities do not require legal or direct pecuniary incentives to be interested parties. As creators of knowledge, they are essentially 'residual claimants' (Alchian and Demsetz, 1972); long-term shareholders in a product. Moreover, because of their socio-political beliefs these are experts who *want* rather than need to be in the policy arena. They are self-selecting policy actors driven by normative and policy beliefs. Thus, the voluntary status of these advisory bodies is not synonymous with partial commitment. Indeed, the strength of their commitment is such that, once granted entry to the decision-making arena, withdrawal is likely only if a community faces substantive challenges (i.e. anomalous evidence) which demand a re-consideration or revision of its worldview (Haas, 1992a: 18).

Finally, we must gain an awareness of the type of power that can be ceded to epistemic communities. These are not full delegations; their advisory status ensures that these experts will never be the ultimate decision-makers. In theory, epistemic communities will always be on the receiving end of a contingent contract where the principal controls the final outcome and retains the ability to veto advice that does not 'fit' with their preferences. However, the power balance between principal and agent is more nuanced than this interpretation suggests. While accepting the principal's power of *ultima ratio*, in several ways the decision-maker–epistemic community relationship does resemble the incomplete contract model that principal–agent analysis aims to illuminate.

First, the specialised goods that epistemic communities have at their disposal gives these agents a substantial informational advantage. When it comes to highly politicised issues, this information can secure substantial political property rights for epistemic agents. Secondly, the objectivity associated with these policy actors and the knowledge production process ensures that, in practice, decision-makers must at least pay lip service to the epistemic agents' 'truths'. Finally, through bureaucratic institutionalisation, principals effectively confer authority on one set of epistemic actors and invest in one paradigm at the expense of another. Breaking these ties would, at the very least, necessitate the costly process of recruiting new epistemic agents from a finite supply.

How might delegations to epistemic communities deliver both efficient advice and credible policies to principals? The answer to this lies in principals' ability to identify, structure and manage the unique

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blend of the socio-political values and substantive knowledge embodied by the two distinct sides of an epistemic community's belief system. Regarding efficiency, the principal–agent literature is clear: decision-makers delegate authority for policy advice to agents with greater substantive expertise than their own (Sappington, 1991). However, substantive inputs alone will not secure efficiency. The agents' socio-political beliefs are key and, crudely stated, a delegation is assumed to be efficient where the advice delivered by the agent contributes to the satisfaction of the principal's policy preferences.

Epistemic communities' normative convictions and policy ideas represent key assets in this pursuit of efficiency. Where an epistemic community's socio-political beliefs on an issue are aligned or can be engineered to 'fit' with those held by decision-makers we can expect the knowledge they produce to be geared toward the delivery of decision-makers' policy preferences.

Political scientists have been reminded recently that decision-makers also delegate to enhance the credibility of their policy commitments (Majone, 2001; 2005). Rooted in monetary policy analysis, the credibility challenge decision-makers face is to convince their own principals – embodied by the median voter – that their economic policies are time-consistent (Kydlund and Prescott, 1977; Rogoff, 1985). Thus, voters must be convinced not only that decision-makers will bind their successors to protect the public interest but that they too will exercise self-control while in office and reject expediency. The best way for political decision-makers to secure the confidence of the citizens is to surrender control over monetary policy to reputable expert agents, who operate in independent central banks, and whose commitment to conservative economic targets cannot be politically tainted.

This orthodox interpretation of credibility treats citizen confidence as a function of process-oriented factors associated with the central bank and bankers (Hayo, 1998). Bankers' reputations, transparency in how they reach their economic targets and the independence of the central bank itself insulate monetary policy from political whims (Barro and Gordon, 1983). Agents' autonomy from their principals is the means to the end of policy credibility:

...an agent who simply carries out the principal's directives cannot enhance the latter's credibility. (Majone, 2001: 104)

Independence stymies expedient decision-makers, and enables central bankers to 'lock in' political principals and their successors to fiscal decisions and so promote policy consistency and stability over the long term. The epistemic communities' production of professionally validated knowledge suggests that, by definition, these actors have the potential to secure policy credibility on such terms.

This emphasis on the agent's reputation and independence from the principals has been readily translated to political science accounts of policy credibility. However, scholars have been keen to point out that delegations 'do not occur in a political vacuum' (McNamara, 2002: 55). The variation in the mandates of central banks alone serves to remind us that independence is found in the eye of the beholder (De Haan and van't Hag, 1995). The result has been a focus on developing methodological tools which interrogate the exogeneity of agents and offer ways to empirically operationalise the concept of independence (Gilardi, 2002). Maggetti (2007) has advanced this measurement of independence most effectively by highlighting the importance of *de facto* independence as opposed to the formal independence associated with mandates (see Gilardi (2002) for an operationalisation of this). Because *de facto* independence characterises the autonomy experienced by agents on a day-to-day basis, focusing on this takes us beyond the statutes and formal rules and into the heart of the informal norms and habits that underpin the principals' relationships with their agents. Specifically, by bringing into relief the *practice* of independence as opposed to the *principle*, we illuminate the extent to which agents find their work subject to external pressure and interference at an operational level.

Thus, we would expect agents that possess a high degree of *de facto* independence to act 'without external constraints' (Nordlinger, 1987: 361 cited in Maggetti, 2007: 272) and, in such circumstances, we would expect policy credibility to be safeguarded. Conversely, agents whose working practices are directly influenced by political principals', and experience greater constraints on their freedom, would produce limited credibility for their principals. Such external pressure will not simply be exerted downward from political principals but may also bubble up from the regulatees in society who are targeted by a regulation (Pedersen, 2006 cited in Maggetti, 2007: 272).

Delegating to 'evolutionary' and 'governmental' epistemic communities

Decision-makers' motivations for delegating knowledge production can be the result of a desire for both

policy efficiency and credibility. However, the orthodoxy, which associates successful delegations of efficiency and credibility with opposing levels of principal control and agent autonomy, leaves it open to question whether or not a single epistemic community could satisfy both goals simultaneously. In a bid to ascertain the extent to which such dual satisfaction might be possible, and to illuminate the role of principal control/agent autonomy in the delivery of these goals, the present paper compares the satisfaction delivered by two types of epistemic community distinguished by their *de facto* autonomy from decision-makers.

In the original formulation of the concept, Haas (1989; 1992a) presented an epistemic communities' autonomy as connected to the substantive knowledge which these communities create. In this view, political principals are not in a position to impose their preferences or version of the 'truth' because the experts' first loyalty is to their professional norms and collective identity. Not all epistemic communities are the same, however. The empirical studies inspired by Haas's thesis suggest that more subtlety is required when addressing the issue of external influence. In particular, substantial variation can be found in the degree of informal autonomy some epistemic communities enjoy from the decision-makers they advise.

The studies suggest there are two types of epistemic communities: labelled here as 'evolutionary' and 'governmental', which vary according to the strength of their collective identity. Variation in their *de facto* independence is revealed in two respects: political influence on their composition and political participation in the knowledge production process.

The first are those originally envisaged by Haas, and enjoy a high degree of autonomy from the decision-makers they advise. Termed here 'evolutionary' epistemic communities, these groups have developed organically over time within professional arenas and through their members' own networks (e.g. Adler, 1992; Haas, 1992b). Though representatives of these established networks can, for a time, become institutionalised in bureaucratic positions, their movement into the political arena is incidental to their existence. Such agents, and the paradigms of thought they represent, had a life before the political principals' intervention and have one after it. These are communities in the classical sense where

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members have a long-term commitment to a common outlook (MacIver, 1917: 23–24). This strong collective identity ensures that knowledge production in evolutionary communities is predominately guided by research questions set by the experts, to a timescale agreed by them and with little involvement by decision-makers in the report drafting process.

The second epistemic community type concern groups of experts assembled in the policy arena, and are marked by the low *de facto* independence from the political decision-makers who have brought them together (e.g. Dunlop, 2009; Verdun, 1999). The membership of these ‘governmental’ epistemic communities is vetted and engineered by political principals. These are less communities in the classical sense and more associations established for the pursuit of a defined task (MacIver, 1917: 23–24). The absence of a collective history means that, almost by definition, governmental amalgams lack a purpose beyond the task set them by their principals. While the content of governmental epistemic communities’ belief systems remains the sum of the experts’ convictions and knowledge, these actors rely on the principals who created them to help guide knowledge production.

While they are both still epistemic communities (the professional personification of four epistemic elements) their differing levels of operational independence represent differences in kind that carry important implications for what they deliver to decision-makers. Before converting these differences into concrete hypotheses on efficiency and credibility, we need to be clear that we are conceiving of autonomy in relative rather than absolute terms. A governmental epistemic community need not be the hapless ‘plaything’ of the political principals it advises as it still to be constrained in terms of who produces the knowledge or how that knowledge is produced. While an evolutionary community is effectively independent from decision-makers, it must still be able to navigate the world of politics if it is to get its point across.

This paper deploys principal–agent modelling to explore the relationship between decision-makers and the two types of epistemic community. The focus of agency analyses on micro-level relationships ensures that it sits well with the concept of epistemic communities, enabling the construction of two hypotheses. These relate each type of epistemic community to one delegation: H_A on efficiency and H_B on credibility.

The central part of the efficiency challenge for principals is to structure delegations in ways that guards against agent opportunism or ‘moral hazard’. It is expected that the principals will achieve a higher degree of preference alignment with governmental epistemic communities whose membership they can engineer than with their established evolutionary counterparts. The immature nature of governmental epistemic communities’ belief systems and their contingent research agenda makes them

more likely to engage with an issue from the principal’s viewpoint than their evolutionary counterparts whose more entrenched belief systems will make them less adaptable to decision-makers’ agendas. On this basis, it is suggested that *governmental epistemic communities provide more efficient delegations than evolutionary epistemic communities* (H_A).

In the orthodox view, agents must operate free from political interference in order to secure policy credibility. It is postulated that, because they enter the policy process with entrenched belief systems and established collective agendas, this high level of operational autonomy from decision-makers will make them more likely to hold an independent line in the face of political pressure and so deliver policy credibility. Evolutionary epistemic communities will be less susceptible to intercession by the principals in the production of knowledge than the newly formed governmental communities. Such independence makes evolutionary communities more likely to offer advice which will be seen as time-consistent than governmental ones. This leads to the expectation that *evolutionary communities would score higher on policy credibility than their governmental counterparts* (H_B).

Case study: the European hormones ‘saga’

Case selection and research design

To explore these hypotheses, this paper examines the role of the two epistemic communities that advised the EC on the safety of hormone growth promoters in meat, first in the 1980s and then again in the 1990s. Analysis is informed, and belief systems identified, through interviews conducted by the author with members of the two epistemic communities and decision-makers from the EC.³ This is accompanied by the customary analysis of the documentary evidence, predominately scientific reports, legislation, internal reports and government publications.

The hormones case has been selected for three reasons. First, the two epistemic community types are present. Secondly, the political stakes were such that, in both delegations the principal would be significantly affected by their agents’ actions. Finally, it satisfies the pre-condition of utility models that the actors’ preferences are stable. Both efficiency and credibility challenges remained fundamentally the same across the two decades of the saga. On efficiency, the EC delegated in search of information (scientific evidence) that would be sufficient to deliver a ban on growth promoters and close down the dissent of a few member states⁴ and major trading partners in a timely manner. In terms of the credibility, the aim of the EC decision-makers was to persuade the domestic audience, in this case the majority of member states and the European Parliament (EP), of its long-term commitment to

consumer protection. It is worth dwelling on how the time-consistency problem, most associated with monetary policy, affects environmental and health safety issues. The argument is a simple one. In issues marked by scientific uncertainty, the knowledge of risk is often indeterminate and interpretations of what is acceptable change over time. There is often a strong political temptation to reverse or postpone costly regulations that prohibit a substance or practice and maintain policy flexibility, or good relations with trading partners, until such time as scientific evidence is conclusive. These risks are borne by the citizens and the consequences are potentially irreversible. Thus, credibility seeking decision-makers must plan for the future before the future arrives by binding themselves and future decision-makers to a precautionary approach in advance of any conclusive evidence of harm (Gollier and Treich, 2003).

It was with these dual challenges in mind that two different types of epistemic community were called upon for advice.

Delegation 1: the evolutionary epistemic community

As the section title suggests, the hormones 'saga' was not a short-lived affair. It first surfaced in the late 1970s and continuing until the turn of the century.⁵ In 1981, following high profile public health scares in Italy triggered by the discovery of residues of the known carcinogen diethylstilbestrol (DES) in baby food and veal served in school meals, legislation across the EU was harmonised to outlaw the administration of this compound and other such synthetic estrogens to livestock for fattening purposes.⁶

With consumer concern pushing the veal market to the brink of collapse and the majority of EU producers liable to benefit from a ban, the Directorate-General (DG) Agriculture also moved to ban all other hormones used for non-therapeutic purposes (Commission of the European Communities, 1980). This was put on hold by three member states,⁷ where the use of growth promoters was prevalent, and disquiet from the EU's two largest beef trade partners, the USA and Canada. To address this dissent, in 1982 the EC launched a scientific investigation into the safety of five hormones in question to provide experts with 'an opportunity to make hormones acceptable' (Commission of the European Communities, 1982).

DG Agriculture requested that scientists from its Scientific Veterinary Committee (SVC) construct a short-term working group. With international veterinary experts on hormones already serving on this committee and further eminent specialists in the field invited to join the hormones group by the group's chair, DG Agriculture had delegated to an archetypal evolutionary epistemic community. The Scientific Group on Anabolic Agents in Animal Production, chaired by the UK SVC representative, Professor Eric Lamming, was a 'who's who' of experts on growth promoters in agriculture.⁸ As

academic veterinary scientists, the 'Lamming committee' established their research question as a puzzle of pure science and assessed the 'harmful effects to health induced by growth promoters' via quantitative laboratory extrapolations.

These methodological commitments are reflected in the group's interim report (1983) which advised that while intrinsically carcinogenic, the presence of the three naturally occurring hormones in humans and observance of good animal husbandry practices would ensure that they posed no additional risk. While noting that 'vulnerable populations' might be at increased risk from additional doses, the scientists' normative commitment to empiricism led them to the view that such risks did not warrant the policy of prohibition favoured by the principal (Lamming, 1983). Thus, the degree of harm resulting from misuse, which had triggered the principal's initial call for advice, was not part of the scientists' analyses.

The high degree of independence that this evolutionary agent had from DG Agriculture revealed itself in more than the epistemic community's socio-political focus. In knowledge production, the principal could exercise no control over the research timetable. The Lamming committee was unequivocal: the only limits to which the committee *could* submit were those dictated by the evidence gathering process. The data gaps on the two synthetic compounds were such that the research would continue indefinitely.

However, the scientists were off the political pace. Anti-hormone campaigns had been launched by the increasingly powerful supranational consumer and environmental lobbies (particularly Bureau Européen des Unions de Consommateurs (BEUC)) and the parliament's environment and agriculture committees were conducting a wide-ranging inquiry into the quality of meat production (EP, 1989). Some member states (notably France) were even considering domestic legislation to outlaw hormones. These social actors were critical that the Lamming committee was not exploring the long-term consequences of consuming meat produced using growth promoters and the risks of high doses which resulted from over-dosage (Agence Europe, 1984; 1985a; 1985b). The result was that the agent was left producing evidence with little policy relevance and the principal was under fire for allowing its work to continue.⁹ By the time scientists were prepared to report back, DG Agriculture had moved to prohibit both the use of the five hormones and third country imports of hormone-treated beef (Council of the European Communities, 1988). It had taken no further advice from its scientific group. On the verge of formally presenting their final report, their work was suspended. The close-out meeting was cancelled and the report was neither formally signed-off nor published by the EC. Indeed technically, the working group remains in prorogation.

The epistemic community's final report was presented at the British Veterinary Association

conference in 1987 (*New Scientist*, 17 September 1987), a move which involved each signatory breaking a legally binding confidentiality agreement.¹⁰ This reaction to excision from their advisory role illustrates the strength of this evolutionary community's normative and policy beliefs, that the laboratory evidence which found all five growth promoters to be safe for human consumption should be translated directly into policy. Going public was ultimately 'non-negotiable';¹¹ to withhold data was viewed as an academic crime to the scientists which would have left the research process incomplete and made the group appear 'suspect'.¹²

Delegation 2: the governmental epistemic community

In the absence of any quantitative risk assessment as justification, the USA and Canada characterised the import ban as an illegal trade barrier and the EU faced a 100% *ad valorem* duty on goods to the value of US\$93 million. Negotiations to resolve the dispute eventually reached the World Trade Organization (WTO) Dispute Settlement Body (DSB) in March 1996. Under the WTO's Sanitary and Phytosanitary (SPS) Measures Agreement, members are free to choose a higher level of protection than the norm, provided that it can be justified on a scientific basis (Article 2.2). The EU's direct contravention of what was a stable international scientific consensus on growth promoters' safety gave the complainants a watertight case (JECFA, 1988). The WTO ruled accordingly.

An unexpected concession was made, however. While upholding the DSB's main ruling, in January 1998 the WTO Appellate Body (AB) accepted that the use of what the EC was now dubbing a 'precautionary approach' had been an 'act of good faith' (WTO/AB, 1998: paragraph 194). The EU was given leave to provide quantitative scientific assessment of the risk of the individual hormones as residues in meat. Significantly, the AB ruling reminded parties that higher sanitary measures could be supported by non-scientific factors in risk assessment: such as 'relevant evidence arising from difficulties of control, inspection and enforcement' (WTO/AB, 1998: paragraph 205) which take into account the 'real-world' context 'where people live and work and die' (WTO/AB, 1998: paragraph 187).

This opened the door for the EU's precautionary interpretation of the safety of growth promoters. With 15 months to produce the new assessments, the EC's newly empowered Directorate for Consumer Protection and Public Health (DG Sanco) launched a programme of research ranging from experimental studies to those concerning management-oriented issues of control and abuse. The findings of these, and an evaluation of the existing data, were to be delivered by a new working group of experts to a strict timetable established by officials. As with the Lamming committee, the nucleus of this group was

scientists already advising DG Sanco or their member state administrations. However, the Scientific Committee on Veterinary Measures Related to Public Health (SCVPH) growth promoters sub-group, to give it its full title, was a consciously crafted governmental epistemic community.

To understand the means by which DG Sanco was able to select scientists whom it knew shared its socio-political agenda, some contextual detail is necessary. The SCVPH sub-group was established in the wake of the EC's post-BSE (bovine spongiform encephalopathy) reorganisation. Under instruction by member states and the EP, the centrepiece of this had been the movement to scientific advisory committees on matters of food safety from DG Agriculture to DG Sanco. The scientific committees were reformulated and their members recruited and vetted by DG Sanco. Operating under the guiding principle that decision-makers should have access to scientific evidence which looked primarily to the concerns of consumers, those scientists opposed to a precautionary approach to public health in principle would be unlikely to self-select to join these committees or gain entry.¹³

The composition of the SCVPH sub-group on growth promoters reflected this new approach to scientific evidence gathering. This was not a microcosm of experts who had worked on the growth promoters issue for a long time. Toxicologists worked alongside veterinary public health experts and animal welfare scholars to examine the evidence on growth promoters' safety from all angles. Such multi-disciplinarity may have been an incentive to scientists to join the group,¹⁴ however, the fact that committee of scientists knew little of each other's work meant that this group did not have their own substantive research agenda to pursue.

DG Sanco directed work, with the scientists instructed to advise on 'the potential for adverse effects to human health arising from administration of the six hormones used individually or in combinations for animal growth promotion' (Commission of the European Communities, 1999) within the AB's limited timescale and overseen by the main SCVPH committee. Though Lamming's empiricist consensus still held internationally, the sub-group concluded that all six hormones posed unacceptable risks to consumer health. The 'monolithic' scientific evidence was characterized as incomplete. The rejection was justified on the basis of hormone misuse and export control failures that occurred in the 'real-world context' (Commission of the European Communities, 1999). Given humans' different levels of susceptibility, the governmental epistemic community placed the onus upon the complainants to prove a negative: that unknown additional risks were not unacceptable.

The SCVPH has twice reaffirmed its stance (in May 2000 and April 2002) in response to contrary scientific opinions from the UK Veterinary Products Committee and the Codex Alimentarius. In June

2007, the European Food Safety Authority reviewed the evidence concluding that no revision to the position was required.¹⁵

Analysis

This section relates the case study to each of the two hypotheses in turn.

Observations on efficiency

Governmental epistemic communities provide more efficient delegations than evolutionary epistemic communities (H_A). The case study supports the proposition that principals achieve a higher degree of preference alignment with governmental epistemic communities than with evolutionary communities and, in doing so, increase the efficiency of the delegation.

Delegation to the Lamming committee was clearly a case of adverse selection. Inexperienced in dealing with politicised scientific issues and reluctant to delegate, DG Agriculture turned to an established community of veterinary scientists whose socio-political beliefs on the primacy of empirical evidence were entirely incompatible with its own preference to prohibit. Though selection error was the fundamental cause of inefficiency, it was the agent's 'type' that made it impossible for the principal to salvage anything from the delegation.

The fact that DG Agriculture could not resolve this conflict of interest illustrates two facets of evolutionary epistemic agents' operational independence which can exacerbate adverse selection. First, the entrenched nature of this agent's belief system left its socio-political preferences hidden. DG Agriculture did not gain a clear view of its agent's empiricist agenda until after the interim report was published, by which time it was too late for the principal to shut down its work. Secondly, the depth of this autonomous agent's attachment to its belief system frustrated compromise with political principals.

Policy learning about the substantive and policy implications of 'who' delivers advice on trans-scientific issues ensured that DG Sanco exercised close control over agent selection (for a fuller

account see Dunlop and James, 2007: 412–415). By socially engineering its group's composition, the political principal created an epistemic agent whose preferences on growth promoters were transparent and engaged with the real-world context and non-scientific factors. This practically eliminated the risk that DG Sanco would receive advice which ran inimical to its policy agenda.

This agent's level of autonomy exaggerated the efficiency yielded. The group's lack of collective history, and the heterogeneity its membership, meant the absence of the high level of social capital which had ensured a deeply entrenched socio-political agenda in its evolutionary predecessor. Rather, this group's members' broad socio-political commitment to consumer protection was malleable enough to be directed by DG Sanco.

The hormones case illustrates how governmental epistemic communities' relatively weak collective identity makes them less resistant to the principal's involvement in the production of knowledge than their evolutionary counterparts. DG Sanco's creation of the sub-group enabled it to engage with an epistemic agent as a partner in knowledge production and boost their efficiency gains. While taking advice from its scientists on the research gaps which needed to be plugged, DG Sanco kept control over the direction of knowledge production, binding the group to a highly specified mandate. This assumption of a lead role owed much to the 'private information' (Maskin and Tirole, 1990) DG Sanco held on growth promoters – the result of a decade and a half of policy learning. However, DG Sanco was only able to take full advantage of this because of the type of epistemic community which it had created. The sub-group's lack of collective history or established research focus made the mandate an expected and desirable direction to take. An almost tailor-made knowledge product was the result.

Findings suggest that efficiency was maximised further by the low levels of monitoring required for governmental epistemic communities. The close alignment between principal and agent belief systems had, as analysts predict, downgraded the importance of the monitoring method (Brehms and Gates, 1999). With slippage unlikely, DG Sanco took a backseat, delegating oversight to a committee of the sub-group's peers. The overlap between the membership of the main committee and the hormones sub-group meant that, in effect, the SCVPH's role was to act more as a sounding board than a manager.¹⁶ This was a highly efficient move; simultaneously externalising monitoring costs and ensuring that the group members experienced enough 'agency slack' to feel politically unbiased.

By contrast, when the Lamming committee entered the policy arena they already had control of knowledge production and perceived this to be their exclusive domain. As the long-established international experts on growth promoters, the group's role as policy adviser was 'by the way' of the main

Principals achieve a higher degree of preference alignment with governmental epistemic communities than with evolutionary communities and, in doing so, increase the efficiency of the delegation

business of paradigm building. Though this dominance was reinforced by the lack of guidance given by DG Agriculture, it was the 'existential stability' (Rhodes, 1997) of this evolutionary epistemic agent that ensured that the principal was entirely shut out of knowledge production. The committee's substantive self-sufficiency also frustrated the principal's attempt to monitor, manage and close down its agent's work. This unwillingness to adapt to its principal's agenda was not a political strategy. Given its basis in this agent's loyalty to laboratory-based empirical risk assessment and a wider community of scientists, such resistance could be termed 'principled shirking'.¹⁷ Intentions aside, the working group's inability to compromise and its insistence on self-regulation illustrates that, where informal independence is extremely high, the risk of moral hazard posed by an evolutionary epistemic community can make it impossible to develop shared norms or design effective *ex ante* control mechanisms or *ex post* sanctions.

Observations on credibility

Evolutionary communities would score higher on policy credibility than their governmental counterparts (H_B). While the findings show that evolutionary epistemic communities' detachment from decision-makers makes them more likely to hold an independent line than their governmental successors, a corresponding advantage in policy credibility was not the result. The case study suggests that reputation and independent operation alone were insufficient to secure the confidence of the EC's 'median voter', namely the member states, EP and consumer lobby. Concerns about the long-term effects of hormone consumption and the misuse of hormones which were not addressed by Lamming, had resulted in high-profile campaigns across European and an EP enquiry.

Both communities were composed of scientists in possession of the common proxies of professional objectivity and, with these, could make claim to being essentially apolitical. As experts already established in the field, the Lamming's evolutionary epistemic community had by far the greater independence from political bias of the two groups. The reason that this agent's independence failed to deliver policy credibility is only illuminated by looking beyond the orthodox account of policy credibility toward a social account of credibility (McNamara, 2002). The view expressed here is that a social logic can underpin how agents are designed and operate. In this way, credibility becomes a function of political pressure and social ratification from the dominant, organised interests in a society or from society as a whole (Hall and Franzese, 1998; Hayo, 1998; McCallum, 1995; McNamara and Jones, 1996; Posen, 1993). We are reminded that Rogoff's central banker (1985) is selected, not only by dint of their reputation, but primarily because their commitment to conservatism in monetary policy matches the

prevailing norm of the median voter. A delegation which fails to win the confidence of the citizens who are ultimately targeted by the regulation (Maggetti, 2007: 272–273) cannot deliver policy credibility to political principals.¹⁸ From this viewpoint, to analyse policy credibility purely in terms of the formal principal-agent relationship is to miss a key point. Analysis must be open to the bigger picture which sees agents as legitimating constructs and their outputs as 'solidifying a specific set of ideologies ... which favour certain groups in society' (McNamara, 2002: 48; for a similar point see Braun, 1993).

The first delegation to the evolutionary epistemic community was a technocratic¹⁹ one. It neither operated in a manner nor delivered advice which had been ratified by the wider society. By contrast, the governmental epistemic community's composition, operation and advice reflected the values of the EU's pre-eminent 'social interlocutors' and citizens (McNamara, 2002) who continued to back the ban.²⁰

If inter-subjectivity between agent and society is a key dimension of policy credibility what role does *de facto* independence of the agent from the political principal play? In what way does the principal matter? The first delegation to Lamming illustrates that to win credibility much rests on the principal's translation of the public interest into a delegation. Failure to delegate to a socially legitimate agent left DG Agriculture with an evolutionary epistemic community whose high degree of autonomy from it further exaggerated the credibility challenge it faced. The evolutionary community's entrenched socio-political beliefs on empiricism ensured that it was never speaking the same language on risk and precaution as the audience judging it. With closer ties to its political principal, a greater affinity with the social audience and its concerns might have been achievable. As it was, the agent's stance was deeply embedded. Unable to prevent the agency drift, DG Agriculture was laid open to charges that it was not fully committed to safeguarding consumer protection in the long-term and the policy to ban (EP, 1989).

In the same vein, the governmental agent's low level of operational independence did not stir up the scepticism the orthodox view predicts. DG Sanco was able to keep its epistemic community focused upon the median voter whose confidence was sought. Granting its agent only marginal autonomy, DG Sanco prevented its advisors from falling into a 'credibility trap' (Palley, 2001) where appeals are made to the 'wrong' audience (for example, to those in the international or professional arenas) thus resulting in the loss of their domestic constituents' confidence.

High levels of *de facto* independence frustrated principal intercession in the evolutionary epistemic community's production of knowledge. The fact that this independence did not resolve the time-consistency problem again brings the social logic of policy credibility to the fore. While both communities produced knowledge which conformed to

professional norms (i.e. was externally consistent) the confidence secured by the governmental agent suggests that, in this case, advice also had to be internally consistent (i.e. conform to the prevailing social 'logic of appropriateness' (March and Olsen, 1984)).

The exaggerating role of *de facto* independence can again be seen in relation to knowledge production. For example, the Lamming committee's impermeable research agenda and self-determined timetable ensured it could not be re-oriented. This provoked extreme action where the principal disowned its agent in a bid to salvage its own credibility. Low levels of agent autonomy in the second delegation enabled DG Sanco to deploy 'commitment technologies' (Blinder, 2000), notably the research question, which locked itself and the agent in to the socially resonant position on growth promoters. This reflected the high profile investment in the precautionary principle which the EU audience wanted.

We should be clear. This social logic does not discard the baby with the bathwater. The fact that the advice which appeared time-consistent was socially embedded, and credibility was socially conferred, does not render agent independence obsolete in the pursuit of policy credibility. Though not as autonomous as Lamming, the SCVPH sub-group could still make claims to formal independence. The preferences these scientists expressed were their own. As one member put it 'the tail did not wag the dog'.²¹ In this light, this group may have been 'independent enough' to deliver credibility. By contrast, the Lamming committee may illustrate what happens when an agent is too autonomous. With the agent able to rail against society as well as the political principal, policy credibility is reduced.

Conclusion

This paper responds to a research agenda recently launched in this journal (Braun and Guston, 2003). It models principal-agent relationships between two types of epistemic communities and decision-makers in the EU. Analysis illuminates much about the role of *de facto* independence and community 'type' in

The fact that the advice which appeared time-consistent was socially embedded, and credibility was socially conferred, does not render agent independence obsolete in the pursuit of policy credibility

epistemic communities' delivery on efficiency and credibility. While the hypotheses remain provisional, the case study suggests that governmental epistemic communities promise more complete contracts than their evolutionary counterparts for both delegation objectives. Of course, we should be cautious about generalising. The case presented here was a highly politicised one where the preferences of principal and society were strong and clear. In cases where the stakes are low, we may expect that the orthodox hypothesis on credibility will hold as high levels of expert independence become a proxy for social legitimation.

Analysis suggests that epistemic agents created by political principals may deliver a higher level of efficiency than their evolutionary counterparts. These insights into efficiency bring into relief the role played by agent autonomy. Each delegation was set on a path to inefficiency or efficiency as a result of how much the principal understood about how their political preferences might be translated by the epistemic community. The level of autonomy which accompanies each community type exaggerated the mismatch or match, further frustrating or boosting capacity for policy preferences to be met.

It is not only this low likelihood of shirking which makes governmental epistemic agents a significant resource for decision-makers. Contrary to orthodox predictions, the lack of policy independence which makes governmental agents highly efficient may not dull their ability to deliver a greater level of policy credibility to their principals than their independent counterparts. Rather, the linchpin of policy credibility was the degree of alignment between society's view and those of the agent.

The primacy ascribed by the social logic to the agent-society relationship does not render the agent's autonomy from the principal irrelevant. In fact, the principal becomes the link actor, who ensures that social interests are reflected in the mode of operation of the delegation. The successful or unsuccessful execution of this was again sealed by the composition of the communities and the extent to which each agent's knowledge production and interpretation could be steered toward the social audience. Of course, for principals to make the most of this opportunity, certain scope conditions must be satisfied. In particular, the principal must read society accurately, be knowledgeable enough to know who to delegate to and have a supply of like-minded experts who are willing to be recruited.

While the extreme political independence of the Lamming committee exacerbated the disjuncture between its message and that of the EU's median voter, this does not mean that some level or perception of independence is not required for credibility. Rather, it suggests that what is understood to be *enough independence* from political actors is socially contingent.

The proposition that decision-makers, seeking either efficiency or credibility or both, are more

likely to achieve their objective by manufacturing their own epistemic agent rather than opting for the relative lottery of recruiting an evolutionary one is an important one for the EU's delegation-dominated governance system. Certainly, the volume and pivotal position of advisory committees offer plenty of fruitful opportunities for further research on delegations to epistemic agents and hypotheses of credibility.

This first use of principal-agent analysis with epistemic communities offers a new view of these actors' relationships with decision-makers, and illustrates that they are not simply policy shapers but can also be found 'downstream' at the delivery end of the policy process. To get to grips with the manner in which they satisfy delegation goals we need to sharpen the indicators of *de facto* independence identified here (political influence on community composition and knowledge production), to turn them into accurate measures of autonomy over time. Notably, it is unclear how path dependent the two epistemic community types are. For example, will a governmental community remain locked into its starting point in close proximity to its principal, or can we expect its independence to increase as members form closer bonds?

Empirical work on both theses of policy credibility (orthodox and social) is especially necessary if the synergies between independence, delegatory relationships and social forces are to be better understood. Critically, if the full story of credibility is to unfold, the notion of independence must be interrogated. Two questions appear particularly pertinent. When the EC delegates to an epistemic community, committee or even IRA in what ways is it independent? What happens to these delegations if the balloon of social legitimacy holding them up bursts?

Notes

1. A 1999 internal EC document numbered these committees at nearly 800 (Rhinar, 2002).
2. For exceptions to this see Dunlop (2000, 2009), Radaelli (1995) and Zito (2001).
3. The author conducted 38 semi-structured interviews with active and retired scientists, civil servants, politicians and interest group actors. In most cases, anonymity was requested.
4. It should be noted that only the UK was consistent in its opposition to the ban.
5. See Peterson (1988) for an account up to 1988 and Princen (2004) for an analysis of the trade dispute.
6. These were three naturally occurring or endogenous hormones (17 β -estradiol; progesterone; testosterone) and two exogenous, synthetic compounds (trenbolone acetate and zeranol).
7. Belgium, Ireland and the UK.
8. Interview with working group member.
9. Interview with working group member and DG Agriculture official.
10. 16 of the 22 members felt able to put their names to the publication, though all endorsed its conclusions.
11. Interview with working group member.
12. Interview with working group member.
13. Interview with working group member and DG Sanco officials.
14. Two senior sub-group members commented that the lack of familiarity within the group opened up previously untapped

networks to the individual scientists.

15. Opinion of the Scientific Panel on Contaminants in the Food Chain (CONTAM) related to hormone residues in bovine meat and meat products, question number: EFSA-Q-2005-048, adopted on 12 June 2007, published in *EFSA Journal* (2007) 510, pp 1–62, available at <http://www.efsa.europa.eu/EFSA/efsa_locale-1178620753812_1178622336805.htm>, last accessed 14 June 2009.
16. Interview with sub-group and SCVPH member.
17. For more on the idea of 'principled agents' see Besley (2006) and DiIulio (1994).
18. The best known empirical discussion of the social credibility thesis concerns the high level of citizen confidence in post-war German economic policy. This was, in part, a function of the fact that Bundesbank policy reflected the population's 'deep-rooted' aversion to high inflation and preference for price stability (McNamara and Jones, 1996; Treutler, 1993).
19. See Shapiro and Guston (2007: 541) for more on technocracy in regulatory science.
20. For example, in 1997 57% of European citizens viewed the absence of growth promoters in meat as an indicator of food safety (Eurobarometer 1998, Q. 56). This was reflected in the precautionary stance on hormones that was maintained by the EP which had voted 366–0 on a resolution urging the EC to maintain the ban citing consumer concern, questions of animal welfare and meat quality as its' rationale. A similar outlook was taken by the majority of member states (the main exception being the UK) and EU consumer alliance (BEUC, 1996).
21. Interview with sub-group member.

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