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## **European governance still technocratic? New modes of governance for food safety regulation in the European Union**

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### **Abstract**

This article contributes to the debate on technocratic governance in the European Union. It examines the relationship between scientific expertise and policy-making in the foodstuffs sector and scrutinises the hypothesis that the European Commission follows a technocratic model in the food safety regulation, and that this model is applied to the new European food law. To this end, a typology is developed to distinguish between decisionist, technocratic and reflexive governance. Interestingly, the findings of this article suggests that there is not only a shift from technocratic toward decisionist but also to reflexive governance. To some extent, this change can also be observed in the general debate on European governance. In conclusion it is argued that tensions arise between the three ideal-type models of scientific expertise for policy-making, and that the European model is contested by the international level.

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“What I see is that the Commission never ignored any of the scientific recommendations” (President of the European Commission Jacques Santer 1997)

“The scientific advice provided by the European Food Safety Agency is of high quality” (European environment commissioner Stavros Dimas 2008)

## Introduction <sup>(1)</sup> ↑

At a meeting in Luxembourg in June 2008 the EU environment ministers agreed that the risk assessments of genetically modified organisms (GMO) carried out by the European Food Safety Agency (EFSA) are insufficient (Phillips 2008). The member states called for a reform of the scientific advice provided by the EFSA and France announced to formulate a proposal during its presidency in the second half of 2008. In this context the German environmental minister Sigmar Gabriel said that it should be clarified whether the European approval procedure is essentially a scientific or a political question (Associated Press 2008). These statements refer to two questions: firstly which principles could guide a reform of the EFSA and secondly whether collective binding decisions in risk controversies should be made by experts or politicians.

In the eyes of the European public the policy-making of the European Union is mainly technocratic and there are some arguments from the social sciences that support this view. This applies particularly for the European Commission that, due to its lack of democratic legitimation, is perceived as a bureaucratic institution supplemented with a rather technocratic self-conception (Christiansen 1997; Harcourt and Radaelli 1999; Peterson 1995; Wallace and Smith 1995). Paradigmatic for this technocratic style is the White Paper on “European Governance”, which the Commission published in 2001 after a comprehensive consultation process to gain back public

confidence after the scandals of the Santer-Commission and in order to mitigate the democratic deficit of European policy-making (European Commission 2001b). Many scholars criticised the technocratic philosophy of the White Paper and noted that efficient problem-solving will not dispel the legitimacy problems of the European Commission (Eriksen 2001; Joerges 2002; Kohler-Koch 2001).

The democratic deficit of Commission decisions is not the only reason why the Commission is deemed to be a technocratic institution. Due to limited human and financial resources of the Commission and the mainly regulatory character of European policy-making, the Commission is heavily dependent on expert advice (Majone 1996; Majone 1998). Accordingly, since the 1960s, a differentiated system of expert and scientific advice has emerged at the European level, comprised of ad hoc consultations, advisory committees, scientific committees, Comitology committees and, quite recently, of several independent agencies. In the food safety sector alone there were 6 scientific and Comitology committees to provide independent expert advice to the Commission. The opinions of these scientific committees had a great influence on the decision-making of the Commission, given that the Commission usually followed these recommendations (Gray 1998; Joerges and Neyer 1997; König and Jasanoff 2002).

Some scholars argue that the deliberative style of this technocratic system leads to efficient and effective decision-making in the European Union and will increase the output legitimacy (Majone 1997; Neyer 2004). Others point out that politicians merely pretend to solve purely technical problems, and that the European Commission in particular has an interest in presenting its policy proposals as depoliticised technical solutions (Landfried 1997). However, both agree that the European decision making is done by experts in a technocratic way.

Since 1996 the European technocratic system met with criticism. Due to the Mad Cow Disease and other food scandals in the European Union, the scientific committee system of the European Commission was accused of intransparency, vested interests, and biased scientific opinions. Particularly the European Parliament criticised the maladministration of the Commission and the lack of independence of the scientific committees (European Parliament 1997). In the aftermath of this crisis the institutions of scientific advice for food safety and consumer health in the European Union were reformed to regain consumer confidence. The newly established EFSA – which is now heavily criticised by environmental groups – was meant to solve these problems and to provide “truly” independent scientific advice.

In the course of these institutional reforms the European Commission published a plethora of internal papers, working documents and communications to cope with the problem of collecting, evaluating and using scientific advice for policy decisions in the foodstuffs sector (European Commission 1997a; European Commission 1997b; European Commission 2000b; European Commission 2000d). From these documents it is possible to extract the general ideas and principles of the institutionalisation of scientific advice.

What is the outcome of these discussions? Is the system of scientific advice for policy-making still technocratic? One hypothesis is that, as a result of the long-lasting technocratic character of the European Commission and its committees, the current ideas of science-based policy-making might be just as technocratic and there could be a strong path dependency in favour of the established system. This assumption is supported by the fact that the basic systems of scientific advice in the EU member states are mainly technocratic too. Thus it is likely that the member states have transferred their cultures of science-based policy-making to the European level (Millstone 2005). The contrary hypothesis states that due to the legitimacy crisis of the committee system the previous technocratic system has lost its persuasiveness and must be abolished. But which institutional system will emerge in its place? To some extent these ideas will influence the new reform debate initiated by France in its presidency in the second half of 2008. Or, as commissioner Stavros Dimas has said: “However, we need to strengthen EFSA's capacity to evaluate the risks and take into account changes in

agricultural practices and local geographic conditions” (Phillips 2008).

In order to establish whether there are any new modes of governance as compared to technocratic governance, this article analyses the ideas of the European Commission concerning the reform of the science and governance interface and the outcome of the institutional reform process in the field of food safety. Governance in this encompassing sense means different modes of policy making and political steering (Héritier 2002). Technocratic governance in this sense is the typical way of evidence based policy making by the European Commission. New modes of governance are assumed to be new forms of policy making in relation to technocratic governance. Firstly, a contrasting typology of science and governance relationships will be developed. It distinguishes three ideal-type relationships derived from the sociology of science literature. Secondly, these ideal types are applied to the old scientific committees, the preparatory Commission documents and the final result of these discussions, the new European food law. Thirdly, potential impacts of these ideas for European governance will be identified and examined more generally. Finally, it is discussed how the outcome could be assessed against the background of the three ideal types of scientific advice for policy-making.

## 2. How can the relationship between science and politics be classified? <sup>↑</sup>

Starting at the latest with Max Weber, there has been an academic discussion on the role science plays in policy-making (Collingridge and Reeve 1986; Fischer 1990; Peters and Barker 1993; Weber 1985). In the 1960s, Habermas developed a widely accepted concept to classify the relationship between scientific expertise and policy-making (Habermas 1969). He distinguished a decisionist, a technocratic, and a pragmatic model. In the decisionist model politics determine the expert advice, in the technocratic model the experts determine the politics, and in the pragmatic model Habermas describes a new mode of critical interdependence and mutual communication between experts and politicians. Almost the same conceptualisation has been elaborated by Weingart and later by Millstone (Millstone 2005; Weingart 1999). This concept also refers to the three modes of Habermas.

In a first approximation the three modes of governance in scientific policy-making can be associated with three “classical” German sociologists, Max Weber (decisionist), Helmut Schelsky (technocratic) and Ulrich Beck (reflexive). However there are a lot of other scholars since Plato’s ‘ideal state’ that dealt with this issue (Collins and Evans 2002; de Jong and Mentzel 2001; Eeten 1999; Funtowicz et al. 2000). The three modes of governance should be understood as ideal types and, of course, they certainly never appear in their pure form in the real world. Furthermore, they are not only for structuring empirical findings but they imply normative assumptions (and an according rhetoric) about the institutional setting of the science policy interface.

### 2.1. Technocratic Governance <sup>↑</sup>

The technocratic model is presumably the oldest of the three modes of governance. Forerunners would be the early positivists Henri de Saint-Simon and Auguste Comte, or even in Plato’s ‘philosophers state’ (de Jong and Mentzel 2001; Millstone 2005). Yet this view was very influential in the midst of the 20<sup>th</sup> century in the theories of the sociologists Ellul and Schelsky, and also in optimistic ideas of urban planning or regulating of economic processes in modern societies in the 1960s (Ellul 1964; Schelsky 1961; Schelsky 1965). Technocracy in this sense means governance by experts. This model wants to make politics more rational and efficient. It takes into account that the growth of scientific knowledge and technological inventions is faster than the process of political decision-making and that the politicians cannot understand all these complex issues. Only the experts are capable of assessing the underlying issues, e.g. the risks of bio- or nanotechnology, and subsequently are capable to develop adequate solutions. Therefore, the experts should make the

decisions. In this model of governance, experts are therefore the dominant actors. Schelsky believed in the superiority of scientific and expert knowledge and assumed that irrational, biased and value-laden policy-making will be replaced by political decisions based only on sound science. In this model the politician becomes fully dependent on the expert and in the end can be replaced by him or her (Weingart 1999). In a technocratic state there is no need for politicians, especially for political parties or political stakeholders, and there is no need for participation of the public in the production of the scientific expertise. Quite on the contrary, the inclusion of politicians and laymen into the scientific process of knowledge production would be ineffective and inefficient. The politicians only formally sign what the experts have decided (due to democratic rules) or, in a more “sophisticated” way, the politicians pretend to do exactly what the experts have decided. There is no need to separate truth from power, on the contrary, separation produces a lack of cooperation and is therefore inefficient (Hart 2003). Thus in this model the experts already have the power, given that the superior scientific arguments will prevail. Therefore the institutional design should guarantee that the best available scientific knowledge is used. For that reason, the most excellent scientists must be chosen. Only these experts are able to identify the “one best way” to solve policy problems (Schelsky 1965). Correspondingly, the technocratic model usually applies the rhetorical device of the “best available expertise” or “elite scientists” to legitimise public policy and to increase the output legitimation.

### Figure 1

The shortcomings of technocratic governance seem obvious. First of all, political decisions always imply normative reasoning and cannot be reduced to pure technical decisions. The presentation of a political decision as an indispensable and inherent necessity is only a rhetorical device to gain legitimacy for disagreeable political decisions. The second shortcoming of this model is the observation that science itself rarely speaks with one voice. Science is divided into several disciplines, theories, and different methodologies. Therefore it is always possible to find an expert with an opposite opinion. And emphasis of the excellence of the own experts is often only a rhetorical attempt to de-legitimise the opposing experts.

## **2.2. Decisionist Governance**

The counter concept of technocratic governance inverts the relationship between expertise and politics. In this model, the political decisions dominate the recommendations of the experts. It follows the philosophy of Hobbes and Machiavelli and asks for the primacy of politics. The “principe” should take expert advice, but only if he wants, when he wants and he is not obliged to follow it (Machiavelli 2005). The modern version of Weber’s decisionism recognises the rationality of bureaucratic authority but demands a strict separation between the political leaders and the experts. The objective of the decisionist model is to have clear accountabilities. Yet, in the decisionist model, politics come first and prevail over expertise. The experts are only a means to an end (Millstone 2005). Simply because politicians must make decisions relating to different or even contrary values and goals, policy-problems can never be solved by facts alone. Therefore, there should be a strict and clear division of labour between value-setting politicians and scientists who produce neutral, objective knowledge. Following the Weberian idea of value neutrality (Wertneutralität), there should be no political values or interests in the process of scientific knowledge production (Weber 1985). To achieve this the scientific institutions should be as independent as possible – and in a rhetorical sense are presented as truly independent. However, in this concept expert advice is only one of several influences on decision-making. Consequently, it is not necessary to explicitly communicate the advice to the public, seeing that the politicians may ignore the advice the experts have given at any time and without giving reasons.

### Figure 2

The decisionist model has been criticised for its idea of separation between scientific advice and

policy-making. Some scholars argue that it is impractical to separate political interests and expert advice because scientists also have interests and values (Habermas 1968; Habermas 1969). Others have referred to the inefficiency of a strict institutional separation in practical policy-making (Hart 2003).

### 2.3. Reflexive Governance <sup>↑</sup>

Beck's reflexive model can be seen as a critique of both models, the technocratic belief in sound science and the decisionist belief in the division of scientific expertise and policy-making. It agrees with the Weberian view that policy-problems cannot be solved by sound science and scientific evidence alone, but at the same time it dismisses the possibility of a strict and clear division between values and scientific facts, between power and truth. It doubts that there are truly independent and value-neutral experts involved in the policy-making process. In consequence the borderlines between science and governance become blurred, and in some respects – for good cooperation and mutual understanding – it actually should be. Therefore, in this reflexive (but also in the technocratic) view, a strict division is dysfunctional. Instead there has to be a critical interdependence and permanent communication between experts and politicians and the public (Habermas 1969). Another argument is that late modern societies are characterised by a steady rise in expert dissent, scientific uncertainty and scientific ignorance (Beck 1986; Beck 1996; Bösch 2003). Obviously, the lack of scientific knowledge and the phenomenon of expert dissent cause serious problems for the technocratic model, whereas the decisionist model equally has to cope with the effect that in cases of uncertain knowledge and different scientific opinions the experts may be politicised. Politicisation of independent and neutral experts blurs the lines between science and politics and thus the key principle of the Weberian model. For these reasons, Funtowicz and Ravetz speak of the emergence of “post-normal-science” in (late-)modern societies instead of the positivist concept of “sound science”. Post-normal-science is defined as “based on assumptions of unpredictability, incomplete control, and a plurality of legitimate perspectives. [...] where facts are uncertain, values in dispute, stakes high and decisions urgent” (Funtowicz and Ravetz 1993: 739). Due to this, as science has become “post-normal” or has changed to “mode 2” (Nowotny, Scott, and Gibbons 2001), and as a result is more politicised and value-laden, there is a need to democratise science and to apply the precautionary principle (Liberatore and Funtowicz 2003; Nowotny 2003; Saretzki 1997). While the other models wait for verification and confirmation of research results, the reflexive model asks for precautionary action without scientific proof. In this model neither experts nor leading politicians are key actors; civil society, NGOs and laymen act as key actors or are presented as key actors. The “rhetoric” of this model is about transparency, participation and dialogue with civil society and stakeholders. Their task is to control the scientists in the expert committees and to put forth the perspectives and beliefs of non-scientific people (Lash, Szerszynski, and Wynne 1996). Therefore, in this model they should participate in the scientific committees and in supervising the experts. In this sense it is a democratisation of expertise (Maasen and Weingart 2005). In reflexive governance, transparency and participation have priority over excellence and independence. In this respect, this model is the only one of the three that requires an essentially democratic political system (Habermas 1969).

#### Figure 3

The reflexive model has been criticised for its optimistic belief in civil society and the retarding effects on technological innovations of the precautionary principle (Adams 2002; Majone 2002; Sandin et al. 2002). Furthermore, there is concern that the democratisation of expertise will lead to an increased politicisation of the scientific committees. The credibility of the expertise is at risk when NGOs and stakeholders can participate in scientific committees. In addition to that, it remains unclear what laymen can add to scientific discussions, except for making the process inefficient and causing incoherent and irrational decisions.

The different criteria which will steer the empirical analysis can be summarised in the following

table:

Table 1

To sum up the three modes of governance, it can be said that although the technocratic and the decisionist model seem rather old-fashioned, because they were both formulated at the beginning of the last century, there is an ongoing debate among scholars which model should be applied and how to institutionalise the science-policy relationship (Barker and Peters 1993; Millstone and Patrick 2001; Raman 2005). The proponents of the more recent reflexive model argue that these “trans-scientific” questions are typical for late modern societies, that they cause their own policy problems and therefore should receive attention (Beck and Lau 2005; Lash, Szerszynski, and Wynne 1996; Nowotny, Scott, and Gibbons 2001; Weinberg 1972). Particularly the precautionary principle should be applied (Christoforou 2003; Pieterman 2001). The opponents want to break out of this “vicious circle” established by these questions, reject the precautionary principle and return to decisions based on (and only on) sound science (Breyer 1993; Durodié 2003; Majone 2002; Wildavsky 1995). They criticise that the reflexive model will de-legitimise the experts and will lead to a kind of policy-making that is driven by emotions and irrationality (Lieberman and Kwon 1998).

### **3. Methodical approach**

To investigate which mode of governance within the European food law exists and whether it is still technocratic the three models are applied to the most important Commission documents on food safety and the final basic food regulation. The selected documents include the first official proclamation of a reform of the European food law by President Santer before the European Parliament in 1997, the Green Paper on General Principles of Food Law and its concomitant Commission Communication on Consumer Health and Food Safety, also in 1997, its subsequent White Paper on Food Safety and its concomitant Commission Communication on the Precautionary Principle in 2000 and, finally, the new European Food Regulation 178/2002/EC in 2002.

A category system was devised for the interpretation of the documents. It separates the leading question about the relationship between science and policy making in the foodstuffs sector into three categories. These categories correspond to the international concept of risk analysis that is seen appropriate for the way scientific advice is given to governmental institutions in food, environment and consumer safety. In the Codex Alimentarius (the international food law) risk analysis is divided up into scientific risk assessment, risk management and risk communication (Codex Alimentarius 1999). The European Commission has also adopted this concept:

“Risk analysis must form the foundation on which food safety policy is based. The EU must base its food policy on the application of the three components of risk analysis: risk assessment (scientific advice and information analysis) risk management (regulation and control) and risk communication.” (European Commission 2000d)

In each category there are typical characteristics on how scientific opinions, dissenting opinions, institutional settings of risk management, the role of risk communication and important principles in risk analysis are dealt with. In the following table the key statements of the three governance modes developed in the previous section are applied to the three categories of risk analysis and their corresponding typical characteristics.

Table 2

### **4. A new approach in European Food Law: Principles and guidelines for the use of expert advice in the foodstuffs sector**

In the following sections I will analyse the emergence of the new European Food Law and the creation of the European Food Safety Agency (EFSA). I will start with an assessment of the former scientific committees, then I will discuss the preparatory speech of the president of the European Commission on the reform ideas of the food law, the subsequent Green Paper on Food Law, the following White Paper on Food Safety and the final regulation laying down the General Principles and Requirements of Food Law. This reform process has been supplemented by two important Communications: the Consumer Health and Food Safety Communication and the Communication on the Precautionary Principle.

#### **4.1. The Scientific Committees: Textbook examples of technocratic governance** ↑

In the European foodstuffs sector scientific advice used to be provided by so called “Scientific Committees”, e.g. Scientific Committee for Food, the Scientific Veterinary Committee, the Scientific Committee for Pesticides, the Scientific Committee for Animal Nutrition, and the Scientific Committee for Toxicity and Eco-toxicity. The risk management decisions were made by representatives of the member states in “Standing Committees” via Comitology procedure. In the early 1990s and before the committee system was a textbook example of technocratic policy-making. As König and Jasanoff state, the Commission had built a firewall around the scientific committees by pointing out the exclusiveness and preeminence of its members, and, compared to the US, expertise at the EU level is conceived more narrowly in terms of “elite scientists” (König and Jasanoff 2002). The Scientific Committees and also the Standing Committees were completely intransparent and there was no control through the European Parliament or communication with the European public (Bradley 1997; European Parliament 1997). The scientific committees only worked together with the respective competent Directorate General of the European Commission. Their scientific opinions had a great influence on decision-making. Nearly every scientific advice was adopted by the Commission, and the Commission decisions were presented as if they were purely scientific (Baule 2003; Gray 1998; Schlacke 1998). As President Santer said in a speech concerning the BSE-crisis before the European Parliament on 18 February 1997:

“What I see is that the Commission never ignored any of the scientific recommendations.” (Santer 1997)

In the academic literature this form of European governance has thus been termed by some scholars “deliberative supranationalism” in order to explain the effective problem-solving capacity of this European committee system (Joerges 2001; Joerges and Neyer 1997; Neyer 2004). Thus, as Jasanoff states, “European officials and the public tend to accept as ‘science’ any issues that their technical advisory committees are prepared to treat as science. There is apparently little concern that policy issues will illegitimately be decided by scientists under the guise of technical decision-making” (Jasanoff 1987: 225). Particularly for the food safety regulation this form of technocratic governance has been paradigmatic (Gray 1998; Hanking 1997).

#### **4.2. From early statements on the new approach to the White Paper** ↑

However, this efficient and effective technocratic committee system met with criticism from the BSE-Inquiry of the European Parliament, and in the aftermath of this parliamentary report the committee system was reformed (Vos 2000). In his speech to the European Parliament, President Santer announced a new approach in food safety policy. At first glance the new approach seems to reproduce the old model, so that the hypothesis of technocratic governance appears to be verified:

“What we are seeing more and more often at the moment is that our decision-making mechanisms are not necessarily capable of keeping pace with the astonishing advances being made in science.” (Santer 1997)

That implies that the decision makers are not able to cope with the technological and scientific

progress and are dependent on the experts. Furthermore, in the Communication on “Consumer Health and Food Safety”, published in 1997, the European Commission made a clear statement on the role scientific advice should play in the European policy-making regarding food issues:

“In matters relating to the health of the consumer, scientific advice is of the utmost importance at all stages of the drawing up of new legislation and for the execution and management of existing legislation.” (European Commission 1997a)

The term “utmost importance at all stages” can be interpreted as a commitment to the technocratic model. It stresses the relevance of scientific expertise not only at the beginning of the policy process, but also in every single phase of the process. In section two there can be found further evidence for the prioritisation of scientific advice:

“It is an essential safeguard and a top priority to ensure that decisions are taken with full regard to the best available scientific evidence.” (European Commission 1997a)

Again, the “best available scientific evidence” is a prerequisite for the technocratic solution of policy problems. This term is often used as a rhetorical device to assure the public that other scientific opinions are false or unsound science. Yet there are other hints pointing at a technocratic view of the Commission. At the beginning of the Green Paper the Commission clearly endorses this:

“[...] the need for legislation to be based primarily on scientific evidence and risk assessment, in respect of our international obligations.” (European Commission 1997b)

Again, the word “primarily” indicates the major role of scientific advice in this process. Additionally, the Scientific Steering Committee of the European Commission argued for a harmonisation – that is Europeanisation – of the scientific expertise for food safety. The Scientific Steering Committee was afraid of the increasing multiplicity of expertise and that the increasing dissenting scientific opinions would undermine its scientific authority:

“As a consequence the risks from the same agent (stressor) as assessed within the EU may vary substantially. This is the source of much confusion and tends [ to] undermine the credibility of the risk assessment process. The addition of more member states and the establishment of an increasing number of agencies that have risk assessment responsibilities could exacerbate this problem further unless firm steps are taken to harmonise the process.” (Scientific Steering Committee 2003: 4)

Complementary to this “science first”-view and the idea of Europeanisation of expert advice, President Santer announced the establishment of a new independent regulatory agency for food safety. The new agency should be designed after its American role model, the Food and Drug Administration:

“I also think that an independent agency, to meet the specific needs of the Community but based on the positive aspects of the United States Food and Drugs Administration, should be considered.” (Santer 1997)

The US Food and Drug Administration (FDA) is a scientific regulatory agency whose field of competence encompasses the safety of food and feed, and also drugs, medical devices, and cosmetics. One major difference between the US model and the idea of the Commission is that the European variant should only be responsible for food. It can be assumed that the Commission opted for this reduced model because in 1993 a European agency for medical products – the European Medicines Agency – had already been established and the Commission did not want to reorganise this new agency again (2309/93/EEC).

Interestingly, the US FDA is responsible for both scientific risk assessment and political risk management. This means that political decision-making and production of expert advice are combined under one roof and interact with each other (Hart 2003). From this point of view the American concept of an independent regulatory agency can be interpreted as predominantly technocratic. Generally speaking, the more regulatory competences an agency has, the more technocratic it is. Thus, if the Commission actually planned a European FDA, at this early stage the reform ideas seem to have been mainly technocratic once again.

However, what at first view looks like a distinct preference of technocratic governance is counteracted by decisionist and reflexive elements. Already in his parliamentary speech – and contrary to the concept of the FDA – President Santer argued for a strict and clear separation of scientific advice and policy-making:

“[...] that responsibility for legislation should be separate from that for scientific consultation [...].” (Santer 1997)

This idea of separation became the leading principle of the new approach and can be interpreted as an explicit reference to decisionist policy-making. The idea itself was not invented by the Commission. It is a leading principle in international food safety regulations such as the Codex Alimentarius, FAO and WHO rules (Codex Alimentarius 1999; FAO/WHO 1995). According to the guidelines of the Codex Alimentarius there should be a strict separation between scientific risk assessment and political risk management (2)

Moreover, in its Green Paper, “The General Principles of Food Law in the European Union”, the Commission made it clear that it would fulfil its obligations according to the international Codex Alimentarius Commission. Because of the anti-protectionism impetus of the Codex’ standards this means, on the one hand, favouring scientific advice over political issues. But on the other hand this means that the Commission adheres to the principle of institutional separation (European Commission 1997b).

Interestingly, this separation idea originally came from the US National Research Council and was published in a seminal book about risk assessment in the federal government (US NRC 1983). Although the text of the National Research Council itself is ambiguous – as Jasanoff and Millstone point out – these guidelines have been interpreted as recommending a clear separation of science from policy and have been installed in several US agencies (Jasanoff 1990; Millstone 2005). Remarkably, the American way of building agencies does not always correspond to the decisionist ideas mentioned in the US guidelines of the National Research Council.

However, the contemporary European agencies, e.g. the European Environmental Agency, the European Medicines Agency and the European Agency for Safety and Health at Work, are closer to the decisionist model than to the technocratic one. They apply the US guidelines of the National Research Council more strictly than many US agencies, because they tend to be competent for collecting, assessing and producing scientific expertise, rather than for making binding regulatory decisions. This does not mean that they are not independent, but still they are not powerful regulatory agencies. Therefore the idea of creating an independent regulatory agency without risk management competences could be interpreted as following the decisionist model.

Consequently, in its White Paper on Food Safety the Commission had changed its role model. The FDA seemed to be no longer adequate for the European context and the Commission orientated itself along its own agencies, particularly the European Medicines Agency and its former Scientific Committees.

“The Commission envisages the establishment of an independent European Food Authority, with particular responsibilities for both risk assessment and communication

on food safety issues.” (European Commission 2000d)

Thus the Commission was in favour of an “independent assessment agency” without competences for risk management (Fischer 2007). This seems to be consistent with the Commission’s objective to harmonise scientific expertise, but it could also be interpreted as a concession to the unwillingness of the member states to delegate sovereignty to the European level.

As has already been demonstrated, the European agencies are closer to the separation principle of the US National Research Council than some US agencies, e.g. the FDA. As this principle is one of the most important principles of the new approach it could be stated that the European food law is shifting from the technocratic towards the decisionist model.

Yet this is not the only shift that can be diagnosed. Complementary to this principle of separation the Commission in its Communication on “Consumer Health and Food Safety” introduced three leading principles for its scientific committees, which include a combination of the three models.

“The three principles which must be at the basis of the good performance of the scientific committees are, the excellence of their members, their independence and the transparency of their advice.” (European Commission 1997a)

In its Green Paper on “the General Principles of Food Law in the European Union”, published in the same year, again the Commission mentioned the three principles of science-based policy-making: excellence, independence and transparency (European Commission 1997b). In the following years these three principles occur in almost all Commission papers concerning expert advice in the foodstuffs sector. In this context “excellence” means that the scientific advice must be of the highest possible quality. Therefore, scientific qualification and competence are the most important selection criteria for the members of the Scientific Committees (European Commission 1997a). The principle of “independence” asks for scientists who are free of interest which might be in conflict with food safety issues. To secure their independence the committee members shall be paid and the existing requirements for declaration of interests will be extended. The first principle can be classified as rather technocratic, the second one as somewhat decisionist. The principle of transparency, however, is typical for reflexive policy-making. Neither the decisionist nor the technocratic model needs transparency. The Commission states explicitly “that it will fully inform interested parties, including the consumer, about the different steps in the establishment of this advice” (European Commission 1997a). This statement is a rather weak concession to reflexive governance because this model asks for participation in expert institutions not only for mere information about scientific facts, but nevertheless, it can still be interpreted as a step towards the “reflexive” direction.

There is another clear reference to the reflexive model. It deals with the problem of dissenting scientific opinions. In section two of the Communication the Commission states:

“It may not always be possible to achieve consensus amongst the Members of Scientific Committees. The reports of the scientific evaluations and records of the meetings shall accurately mention the different views expressed during evaluation. The minutes of the meeting of the Scientific Committees, including minority views, shall be made publicly available.” (European Commission 1997a)

In addition, the European Commission enumerates some reasons why the technocratic model fails to make good governance:

In some cases, there may be demands – for instance, due to ethical or environmental considerations or specific control and production methods – to go further in the area of the health protection measures than the scientific evidence suggests is necessary. Conversely, in other cases, there may be reasons to balance the scientific or identifiable

risks with society's tolerance of the risks concerned – unhealthy diets and lifestyles being such examples. In still other cases, the scientific advice may not be sufficiently conclusive or complete to allow firm conclusions to be drawn. Finally, scientific advice is not infallible and is subject to change in the light of new developments and knowledge and must therefore be kept under review. (European Commission 1997a)

Furthermore, there is an explicit mention of laymen in this process of communicating scientific advice and a comprehensive guarantee of access to documents:

“Widest possible access to the scientific advice will be guaranteed. [...] Efforts shall be made to present information in a form which is readily understood by laymen.” (European Commission 1997a)

According to the ideas of reflexive policy-making, the Commission announced in its Green Paper on Consumer Health that in its “risk analysis” (3) it will be guided by the precautionary principle in cases of uncertain scientific knowledge or scientific ignorance (European Commission 1997a: 20). In its Green Paper on Food Law it added that in these cases it would appear necessary to take a “conservative approach” to risk management through the application of the precautionary principle (European Commission 1997b: 38). Additionally, in its White Paper on Food Safety the Commission stated:

“Where appropriate, the precautionary principle will be applied in risk management decisions. The Commission intends to present a Communication on this issue.” (European Commission 2000d).

The precautionary principle allows taking regulatory measures without waiting until all necessary scientific knowledge is available. Consequently this principle stands in sharp contrast to the “technocratic” waiting for scientific sound evidence. Later in 2000, the Commission specified the idea of precaution in its Communication on the “Precautionary Principle” and extended its scope to all policies dealing with consumer, health and environmental risks (European Commission 2000b). There the Commission established guidelines for its application and tried to build a common understanding of how to assess, appraise, manage and communicate risks that science is not yet able to evaluate completely (European Commission 2000b). In its document the Commission explicitly stated that scientific uncertainty cannot justify political inaction:

“The absence of scientific proof of the existence of a cause-effect relationship, a quantifiable dose/response relationship or a quantitative evaluation of the probability of the emergence of adverse effects following exposure should not be used to justify inaction.” (European Commission 2000b)

In its White Paper on Food Safety the Commission maintains the new approach to food safety, in particular on the rather reflexive principle of transparency:

“Greater transparency at all levels of Food Safety policy is the thread running through the whole White Paper.” (European Commission 2000d)

Furthermore, the Commission also mentioned a dialogue with the consumer and argued that risk communication should not be a passive transmission of information but should be interactive, involving a dialogue with and feedback from all stakeholders – a clear hint at the reflexive model:

“The Commission, together with the new European Food Authority, will promote a dialogue with consumers to encourage their involvement in the new Food Safety policy.” (European Commission 2000d)

To sum up, the ideas of the Commission are a novel mixture of the three ideal-type models. There are technocratic, decisionist and reflexive statements in all the official documents that have been examined. Compared to the old technocratic system of the scientific committees, the new approach is more decisionist and, even more so, more reflexive. Due to its technocratic history there is still a lot of typical technocratic rhetoric about sound science and best available scientific expertise coming from the Commission. However, due to the BSE-crisis this technocratic rhetoric has lost a lot of its power of persuasion (European Commission 2001b: 19). Hence the strengthening and the adoption of the decisionist and reflexive elements can be interpreted as an attempt to regain confidence in and legitimacy of European food safety policy (European Commission 1997b).

The arguments mentioned in the European debate can be summarised in the following table. They are supplemented with counter-arguments or problems within each ideal type.

Table 3

### 4.3. What remains of the new ideas? ↑

The materialisation of these European discussions on science-based policy-making in the foodstuffs sector is the regulation 178/2002 of the European Parliament and the Council from 28 January 2002. It took over the principles already formulated in 1997 in the Commission Communication on Food Safety and the Green Paper on Food Law. Thus the ideas and views of the Commission became widely accepted despite different institutional structures of science-based policy-making in the member states. The regulation argues that in order to increase confidence in the scientific basis of policy-making, risk assessments should be made in an independent, objective and transparent manner (178/2002/EC). In the institutional arrangement of the EFSA a familiar mixture of the three ideal types can be identified once again. The new institution is only competent for risk assessment and risk communication, but not for political risk management (art. 22 and 23). Risk management is completely separated and remains in the hands of the European Commission and the political standing committees comprised of member state delegates. Therefore the EFSA – like the already established European agencies – can be classified as following the principle of functional separation of the decisionist model. However, there are still distinct traits of technocratic policy-making. The mere existence and the intended function of the EFSA – to harmonise scientific expertise at the European level – indicate the leading role scientific expertise has in European policy-making. In the regulation the task of the new agency is prescribed:

“[...] to provide the Community institutions and the Member States with the best possible scientific opinions.” (178/2002/EC: art. 23 a)

On the one hand the scientific recommendations of the EFSA Committees are – as in the former system – almost entirely adopted, and the EFSA is meant to harmonise scientific expertise. On the other hand there are some remarkable reflexive elements. For example, Article 38 of the regulation prescribes very comprehensive transparency rules. Thus, even rejected requests by the European Parliament, the Commission, or a Member State, as well as the justifications for the refusal, must be published. Article 41 allows access to the agendas, opinions and other documents of the agency. An institutional innovation is the “Management Board”. It shall be composed of 14 members appointed by the Council in consultation with the European Parliament from a list drawn up by the Commission. Four of the recommended members shall have their background in organisations representing consumers and other interests (e.g. foodstuffs industry) in the food chain (art. 25). The Management Board shall hold its meetings in public (art. 38). In addition there are clear indications of a new handling of uncertain scientific knowledge, dissenting scientific opinions and emerging risks. The EFSA has the explicit mandate to search for emerging and new risks and the mandate to communicate risks to the public and stakeholders (art. 34, art. 22 no. 2). Furthermore, minority views must be published:

“Where a substantive divergence over scientific issues has been identified and the body in question is a Member State body, the Authority and the national body shall be obliged to cooperate with a view to either resolving the divergence or preparing a joint document clarifying the contentious scientific issues and identifying the relevant uncertainties in the data. This document shall be made public.” (art. 30)

As a résumé it can be said that the Commission put through many of its new ideas already mentioned in the speech by President Santer and/or in the Green Paper on Food Law. There are only few exceptions, e.g. if the Commission really wanted an independent regulatory agency like the US FDA, it did not succeed and the member states prevailed. As aforesaid, however, a EU FDA would have contradicted the Commission’s leading principle of institutional separation between risk assessment and management.

## 5. European Governance beyond food safety <sup>↑</sup>

The establishment of the EFSA was not the end of the reform process. The ideas applied in the food safety legislation have been spread to other jurisdictions. For example, France and Germany have taken over the principle of organisational separation of risk assessment and risk management and both have created “independent assessment agencies” in order to implement this principle adequately (Fischer 2007). In addition, the leading principles of food law were extended to general guidelines for science-based policy-making in the European Union: by its Working Document “Science, Society and Citizen in Europe” (European Commission 2000a), its Communication “Towards a European Research Area” (European Commission 2000c) and its Communication on the “Precautionary Principle” (European Commission 2000b), the Commission tried to stimulate a broad debate about science and society and sought for further proposals for new ways of thinking about science-society relationships beyond food safety regulation. The Commission clearly stated that the lessons learned in the area of food safety should be considered in other sectors (European Commission 2001a: 21). Therefore, in 2001 the Commission adopted a “Science and Society Action Plan” that aimed at establishing a “new partnership” between science and society and in its White Paper on “European governance” asked for general guidelines on collection and use of expert advice (European Commission 2001a; European Commission 2001b). It is noteworthy that the Commission made no secret of its intention to spread these guidelines to other institutions and member states:

“The Commission will publish from June 2002 guidelines on collection and use of expert advice in the Commission to provide for the accountability, plurality and integrity of the expertise used. [...] Over time these guidelines could form the basis for a common approach for all Institutions and Member States.” (European Commission 2001b: 19)

Recapitulating the reasons for developing these guidelines, the Commission stated self-critically that “it is often unclear who is actually deciding – experts or those with political authority” and added that “a better informed public increasingly questions the content and independence of the expert advice that is given” (European Commission 2001b: 19).

The guidelines were published in a Communication in December 2002 (European Commission 2002). The scope of this Communication was not restricted to scientific expertise, but extended also to include non-scientific expert advice.

Preparatory work has already been made in the context of the White Paper on European Governance by a working group of civil servants of the Commission. The working group labelled “Democratising Expertise and Establishing Scientific Reference Systems” noted that expertise is increasingly required, but that it is also increasingly contested (Report of the Working Group 2001: 2). The suggested solution presented in this report indicates a clear rejection of the technocratic ideas of “educating the public” and “expert elite” and argued for a more transparent and accountable use of

expertise and a sustained dialogue among experts, public and policy makers – in short “democratising expertise” (Report of the Working Group 2001: 2, 7, 14)

“‘Democratising expertise’ is not about ‘majority voting in science’, but rather about guaranteeing ‘due process’ in the way expertise is developed, used and communicated. This implies principles such as accessibility, accountability, and pluralism.” (Report of the Working Group 2001: 7)

These ideas were further developed in the Guidelines “on the collection and use of expertise” (European Commission 2002). There the ideas were regrouped into three new principles: quality, openness and effectiveness. However, these new principles are mostly comprised of the already known principles from the food safety law. Thus quality can be subdivided into excellence, independence and pluralism of viewpoints (European Commission 2002: 9). It is worth mentioning that to judge “pluralism” in scientific expertise as an element of quality – not of inefficiency – is a very recent development in the science-policy relationship. Openness implies more transparency, accountability, public access to documents and a pro-active communication particularly relates to laymen (European Commission 2002: 9). Only the principle of effectiveness – probably taken over from the White Paper on European Governance – has newly been brought into the debate. It is noteworthy that the leading principle of institutional separation of scientific expertise from policy-making, which is still very important in food safety policy, is completely absent in this Communication.

To characterise the differences between the food law and the general guidelines it can be stated that the decisionist model is weakened because the separation principle is not explicitly mentioned anymore. Yet it could be argued that it is implicitly contained in the idea of independence, but there is no clear evidence for this interpretation. Surprisingly, the reflexive model seems to have been extended: pluralism, openness and the application of the precautionary principle are intended to “democratise expertise”.

## 6. Conclusion <sup>↑</sup>

As already mentioned in the introduction, the discussion on the role of science in governance and the institutional arrangements is much more complex than the three ideal types suggest. Elements of all three models can be found in the case study and there is no distinct prevalence of one model. Obviously, the assumption of a predominance of technocratic governance in the Commission concerning the use of scientific advice must be rejected. However it may fit for the period before the new approach in food law was adopted. This implies about 40 years of technocratic governance in the past, and of course this tradition is still alive. The technocratic model is mentioned when the Commission states that its regulation is based “primarily” on scientific evidence, or when it insists that scientific advice is of the “utmost” importance for matters relating to the health of the consumer. However, since 1997, a policy change towards more decisionist and new modes of reflexive governance can be observed. The decisionist model is clearly implemented through the general principle of separation between risk assessment and risk management - that is between facts and values. Nevertheless though, there is a myriad of traits of reflexive ideas, e.g. dialogue with consumers, adopting the precautionary principle in cases of scientific uncertainty, greater transparency and full access to scientific opinions for laymen, and last but not least, the publishing of minority views. It is noteworthy that these rules are completely new, that they were not part of the scientific committee system at the beginning of the 90s and they are not mere rhetoric but part of the new European food law.

Furthermore, in the general guidelines of collecting expert advice a shift from the technocratic towards the reflexive model has occurred. The reasons for this shift in science-based policy-making relate to the breakdown of the technocratic model during the BSE-crisis and subsequent food scandals, as mentioned by some civil servants of the Commission (Report of the Working Group

2001). The food scandals in the 1990s and the risk controversy about genetically modified organisms forced the Commission to re-think and re-structure the relationship between scientific expertise and European governance (Levidow and Marris 2001; Majone 2000; Vos 2000). Thus the new approach was developed to restore and strengthen consumer confidence in the European Union.

Given this mixture of models, it may prove impractical that they contradict each other in some ways (Levidow and Carr 2007). For example, there might be tensions between the technocratic idea of excellent and sound science and the reflexive demand for participation of laymen and stakeholders in scientific committees. From the technocratic and also the decisionist viewpoint the inclusion of laymen and stakeholders and the publishing of minority views may lead to de-legitimising and politicising scientific opinions. In addition, from the perspective of the technocratic model the precautionary principle seems to be unscientific, inefficient and impossible to apply in practice. Starting out from the assumptions of the technocratic model, the principle of separation of truth and power is impracticable and dysfunctional. For efficient risk communication and regulation, risk assessment should not be separated from risk management. Instead there should be intense interaction and communication. On the other hand there is the argument that both the decisionist and the technocratic model are all too one-sided to base regulation primarily on scientific evidence, and that there is no such thing as neutral experts or objective knowledge. It should be rather common to decide on the basis of other criteria, e.g. ethical, social, cultural, political and economic, even in cases when scientific evidence is undoubted.

However, through the adoption of the Regulation 178/2002 and the Codex Alimentarius, as well as other international food law standards, it will be more difficult to reject products for exclusively non-scientific reasons. This technocratic influence counteracts particularly with the reflexive mode of policy-making within the European food law – in particular the precautionary principle – as the dispute at the WTO level between the Commission and the US government about genetically modified crops or hormones in beef demonstrate (Eggers 2001; Joerges and Neyer 2003; Wolf, Ibarreta, and Sørup 2004). In essence, the governance mode of European policy-making in the foodstuffs sector nowadays is less technocratic than in the 1970s, 80s and 90s. Yet if the international level becomes increasingly important the technocratic model could regain force. It remains an open question (and a trigger for further research) how the member states will react to these tensions and whether they will play a role in the announced reform of the approval procedure of GMO. Nevertheless, as this article has attempted to show, there are more reform principles than the simple decision among “scientific or political” suggested by the German environmental minister.

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## Endnotes <sup>↑</sup>

(1) This article is based on findings from a research project "Fischer, Robert/Karrass, Anne/Kröger, Sandra (Hrsg.) (2007): Die Europäische Kommission und die Zukunft der EU. Ideenfabrik zwischen europäischem Auftrag und nationalen Interessen. Opladen, Verlag Barbara Budrich" which was financed by the German Research Foundation within the Graduiertenkolleg "The Future of the European Social Model" at the Georg-August University of Göttingen.

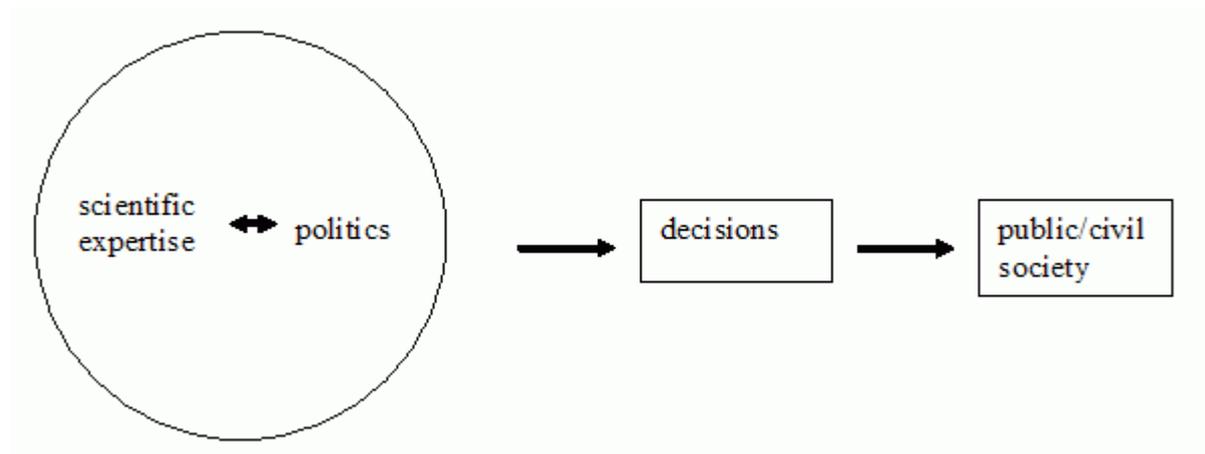
(2) According to definitions by the Codex Alimentarius, risk assessment is a scientifically based process consisting of the identification and characterization of hazards, the assessment of exposure, and the characterization of risk. Risk management, on the other hand, is the process of weighing policy alternatives in the light of the results of risk assessment and, if required, selecting and implementing appropriate control options, including regulatory measures (European Commission 1997).

(3) According to the Codex Alimentarius definition, risk analysis comprises three elements: risk assessment, risk management and risk communication. Thus risk analysis is the whole process of risk regulation.

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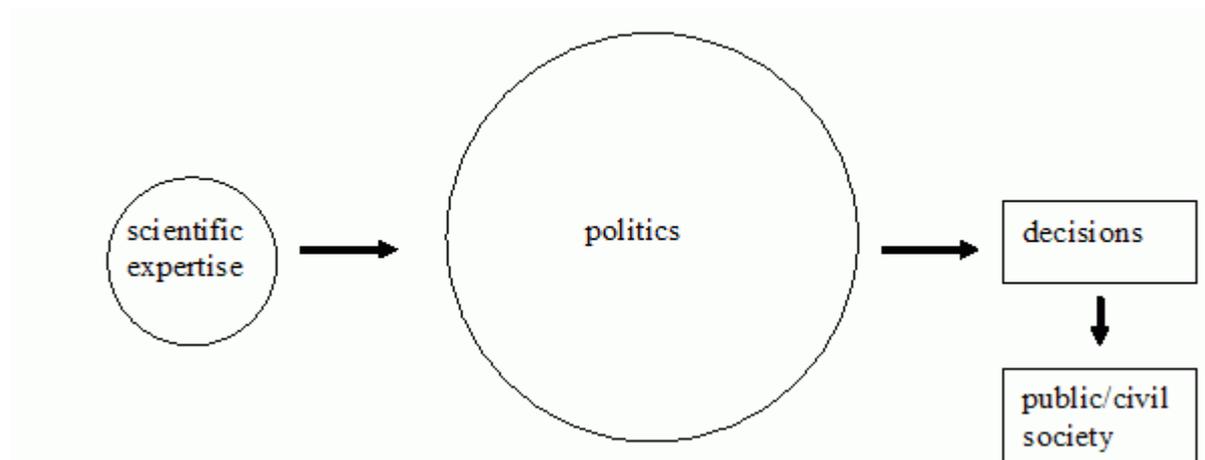
# Figure 1

## Technocratic governance



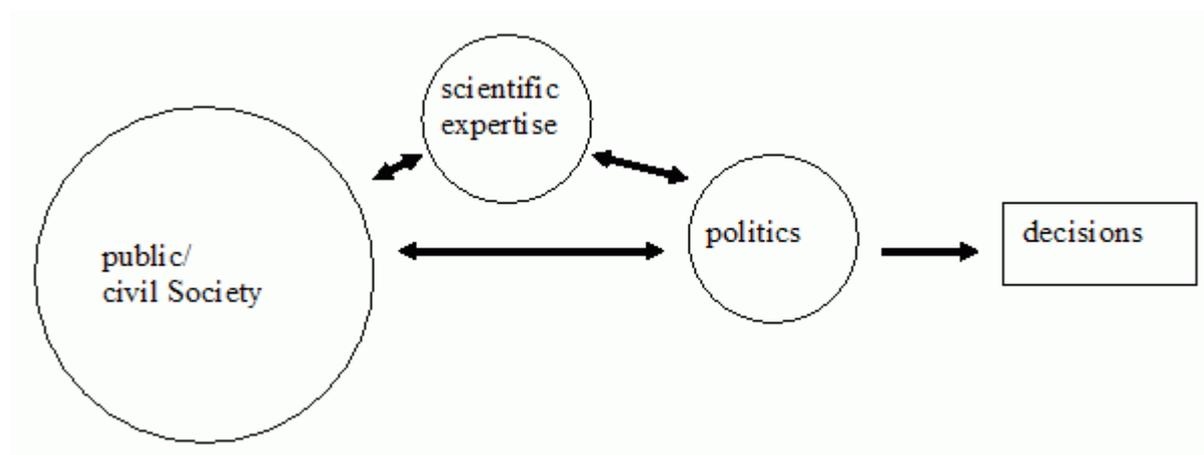
# Figure 2

## Decisionist governance



## Figure 3

### The reflexive model



## Table 1

### Models of scientific expertise for policy-making

Models	Dominant actors	Key assumptions	Criticism	Key thinkers
technocratic	experts, scientists	primacy of expertise, only sound science counts, best available scientific expertise required	policy-making can never be decided by facts alone	Helmut Schelsky
decisionist	leading politicians	primacy of politics, separation of science and politics, of scientific evidence and values,	separation of expert advice and decision-making does not work	Max Weber
reflexive	civil society, lay persons	primacy of participation and control of experts by civil society, applying precautionary measures	de-legitimise scientific opinions, irrational policy-making	Ulrich Beck

## Table 2

### Category-system

category	characteristic	value
risk assessment	role of science in policy making	positive, clear and superior to other knowledge T useful for legitimacy D uncertain and fallible R
	dissenting scientific opinions	dissenting scientific opinions
	compulsory scientific hearing	yes T no D, R
	reaction to hypothetical risks	no T, D yes R
	ideas for increasing credibility	harmonisation and hierarchisation T, D pluralisation and transparency R
risk management	principles for risk analysis	excellence and quality T independence and effectiveness D transparency and dialog R
	institutional design between RA and RM	integration T separation D participation for civil society R
	possibility to ignore scientific recommendations	no T yes D, R
	competence for rapid alert system	scientists T politicians D both and stakeholders R
	precautionary measures	no T only as RM principle D yes at all stages R
risk communication	role of lay people	education T, D dialog R
	public access	closed T, D open R
	institutional competence for RC	scientists T politicians D both R

Legend: T = technocratic, D = decisionist, R = reflexive, RA = risk assessment, RM = risk management, RC = risk communication

## Table 3

### Models of scientific expertise for policy-making of European food safety

Model	Dominant actors at EU-level	Key statements	Counter-arguments/problems
decisionist	member states, Standing Committees	separation of risk assessment and risk management, no risk management competence for the EFSA	an agency without risk management is too weak, the separation leads to inefficient collaboration and is dysfunctional
technocratic	Scientific Committees, EFSA	utmost importance, best available scientific expertise required, the Commission has never ignored any of the scientific recommendations	scientific expertise is not the only source for decision making, the EFSA is not able to produce best available scientific expertise
reflexive	EU-NGOs, European stakeholders	promote a dialogue with consumers, searching for emerging risks, greater transparency at all levels, applying the precautionary principle	laymen must first be educated scientifically for the dialogue, searching for emerging risks and the precautionary principle lead to disproportionate risk regulation, transparency is impracticable due to property rights

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