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Brice Laurent

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Institut d'études politiques de Paris

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Brice Laurent

European Objects.
The troubled dreams of harmonization.

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Chapter 1. The objects of Europe

Of kippers and egg mayonnaise

On July 17, 2019, Boris Johnson spoke during the final husting of the British Conservative party's leadership contest, after which he would become Prime Minister. To an audience used to his tricks and jokes, and perhaps half-expecting them, he showed a plastic-wrapped kipper. He claimed that the cost of sending kippers like the one he produced through the post had "massively increased" because of Brussels bureaucrats "insisting that each kipper must be accompanied by a plastic ice pillow". He added that this requirement was "pointless, expensive, environmentally damaging to health and safety". Boris Johnson's assertion proved to be yet another episode in the national drama that Brexit had become in the United Kingdom. Shortly after this speech, a spokesperson from the European Commission explained that "the case described by Mr Johnson falls outside the scope of the EU legislation and it's purely a UK national competence". She added that she was "talking about the temperature case that he was explaining". The statement was carefully formulated. There are indeed many rules governing the circulation of fish products, both for safety reasons and to ensure the harmonization of the European market, but the ice-pillow was not a European requirement. Yet Johnson's anecdote did resonate with the conservative party members who listened to him, whose laughs showed they knew all too well what the kipper example was about. For Boris Johnson's point was less about the particularities of the rules determining the correct temperature range for fish products, than about the pervasiveness of European regulation in everyday objects and the feeling that it could creep into everyday lives if not kept in check.

Johnson's kipper story can be paralleled with numerous tales of the absurdity of the bureaucratic state, of which European regulations are often the target. For example, in *Le Retour du Général*, a novel published in 2010 by French writer Benoît Duteurtre[1], a new European regulation prohibits restaurant owners from preparing their own traditional *oeufs*

[1] Duteurtre, 2010

mayonnaise and compels them to use standardized mayonnaise strictly defined by painstakingly detailed standards. In Duteurtre's novel, this irritating European intervention into the daily life of the narrator compels 120-year-old General de Gaulle himself to come back to life, to save France yet again from foreign threats. As Johnson and the brexiters ready to use the discourse of the sovereign nation at last freed from the shackles of the European bureaucracy, the novelist here opposes the strength of national politics to the faceless European goals pursued for the sake of the market and technical expertise.

These stories capture a diffuse feeling throughout Europe, of which Brexit is currently the most visible manifestation. Their narrative structure is based on the confrontation between a political domain close to people's interests and concerns, and the annoying yet pervasive bureaucratic interventions pursuing abstract ends. These stories insist on the technicality of the European project, as it manifests itself in our everyday lives through arcane procedures. They claim that this technicality requires no less than the radical reaffirmation of national interest, if not the resurgence of a mythical political figure, like de Gaulle himself in Duteurtre's novel. Boris Johnson's kipper story was false, and Duteurte's is a work of fiction. That narratives opposing the European bureaucracy and national concerns are often partly or entirely inaccurate is significant. It can be seen as an additional sign of the indecipherability of the European regulatory system, which makes it possible for the unscrupulous politician or the skilled novelist to turn the description of this system to his or her advantage. It often spurs a reaction from the pro-European camp, consisting in contrasting the over-simplification (if not the outright deception) of these narratives of European bureaucracy with the reality of what Europe does and for what purposes. But dismissing stories such as Johnson's kipper as merely false accounts of the reality of European regulation risks missing their point. They only glance over the details of the examples they use, because their value, for their authors and their audiences, does not lie in those details, but in the questions they raise about the democratic (or undemocratic) nature of the European project. They ask: What is the appeal of an institution granted a constraining power to act on technical matters, for objectives that appear remote from their expected beneficiaries, if not in contradiction with what is meaningful to them? Should one consider that standardizing eggs and fish is the core of what Europe is currently about, and, as such, affords no hope of grounding a political order resembling democracy?

Over the past few years, I have conducted a series of research projects about science, democracy and the market in European contexts, where these questions were regularly raised. As I studied the use of labels for policy purposes, the governance of controversial technologies such as biofuels or nanomaterials, or the anticipation of the risks caused by nuclear plants or financial institutions, I was drawn to the intricacy of European regulations, as they dealt with the technicalities of construction products, chemicals, or complex industrial facilities. Many discussions about these objects were characterized by oppositions between the institutions of the European Union (often the European Commission) and those of member states; and in many respects these oppositions echoed the narrative of a confrontation between European bureaucracy and local political concerns. But a closer look revealed a more complex picture, in which the numerous debates about technical objects were also about the appropriate way of defining and governing them at the European scale. What the narrative of bureaucracy against politics does not grasp is the high stakes of choosing this or that descriptive criterion, this or that legal approach. But what it does identify is the difficulty of understanding the regulation of objects as an explicitly political task worthy of collective exploration. If acting on technical objects is so prevalent, does this mean that Europe has no way of answering people's concerns? Or could one use these objects to ground a renewed European project?

This book draws on the outcomes of these research projects, as well as numerous other studies conducted by scholars of European integration, to explore the reasoning of European institutions as they act on objects, and locate the political and economic order that this reasoning sustains. I argue that many European democratic issues can be understood by analysing a mode of intervention based on objects. In doing so, my aim is not just to clarify how European regulation works, but also to explore potential ways forward. If these narratives of European bureaucracy do not do justice to the actual practices of the Union's institutions, is it possible to build on what Europe knows how to do, namely acting on and through technical objects, to rethink its actions in democratic terms?

From regulatory issues to European objects

In this book, I use the expression "European objects" to describe technical entities that are regulated by European policies. These entities comprise food products, chemicals, financial

products, consumer goods, drinking water, or occupational environments. They might be market objects expected to circulate across Europe, or technical objects in need of scientific examination because of the risks they entail or can be subjected to. European objects are manifestations of the hope that long-term objectives for European integration, such as a harmonized market or an objective expertise, can be achieved. As they are at the core of the organisation of European markets and European expertise, they epitomize the perceived flaws of European policies. Take the harmonization of consumer goods for instance. The European institutions regularly face two sources of criticism: they are blamed for being entirely devoted to market considerations, allegedly at the expense of political objectives (such as common environmental or social goals); and they are seen as faceless bureaucracies, intervening in minute technical details for unclear intents. But European objects are not just problematic when in need of market harmonization. Consider European regulatory attempts at controlling hazardous substances, like endocrine disruptors. Whereas actors close to the industry would argue that attempts at excluding substances from the European market are based on a political instrumentalization of the precautionary principle that has little to do with scientific evidence, the recurrent inability of European institutions to convincingly withdraw problematic substances from the market has been linked to proximity between industrial interests and European experts. In these situations, the harmonized market and expertise serve as reference points for grounding European policies. They are controversial because of what they entail in practice, but also problematic because of their (un)democratic consequences. They result in actions on European objects that are at the heart of what is often described as the Union's "democratic deficit".

In 1998, scholar of European integration Giandomenico Majone commented on this alleged "democratic deficit", and argued that the term often points to democratic norms inspired by political constructs (such as parliamentary democracies or majority rule) with which the European institutions have little to do[2]. In fact, Majone argues that the democratic deficit is the consequence of a democratic choice: that of leaving matters of sovereign power to nation states, and delegating what he calls "regulatory matters" to European institutions. He argues that Europe is better understood as a "regulatory state", for which specific democratic norms should apply, such as efficiency and the accountability of the process

[2] Majone, 1998

whereby regulation is delegated to European institutions[3]. Majone's argument about the regulatory state is important because it invites us not to be naïve about democracy, or to claim that there is one single democratic format expected to be replicated in Europe as in nation-states. But it also supposes that one can relatively easily define what "efficiency" stands for and how delegation to European institutions can be legitimate.

Majone's proposition ought to be situated in the gradual development of a field of academic work devoted to regulation in European contexts, which parallels the wider evolution of policy making in Europe. As "regulation" has become a keyword in European institutional practice, scholars have analysed the processes that can be subsumed under this term, such as: the delegation of policy to independent agencies in charge of regulating economic and technical activities, the transformation of state-owned activities in domains such as transport or energy into privately-led initiatives indirectly controlled by European legal norms, and the articulation of European and national laws in governing technical risks[4]. These processes are all related to European objects. They are hardly consensual. What a "regulatory state" does, for the benefit of whom, with what understanding of "regulatory", and of what should remain in the domain of national politics are all contentious matters. 20 years after Majone's paper, the "regulatory state" seems highly unstable, and its would-be democratic norms barely consensual, as Member states are still reeling in the aftermath of the financial crisis, anti-European political parties are on the rise, and the United Kingdom is about the leave the Union.

In this context, the study of European objects offers an empirical entry point to explore regulatory work in action and make sense of the controversies that originate from it. But the interest of European objects goes beyond that. First, European objects can be seen as the manifestation of what remains of long-term perspectives for regulation, from Jacques Delors' vision of the Single Market to Jose-Manuel Barroso's "Better Regulation" program seeking to optimize the recourse to the European legal norm[5]. Thus, analysing European objects will allow us to explore what regulation has become after years of evolution that have made it a central component of the European policy world. Second, instead of the technocratic and somewhat abstract policy and legal conceptions of regulation, European

[3] Majone, 1994

[4] Lodge, 2008; Lodge and Wegrich, 2012 ; Thatcher, 2002 ; Thatcher and Coen, 2008.

[5] See e.g. (Radaelli, 2007)

objects are tied to collective concerns, be they consumer needs, human health, energy or the environment. As such, they could provide analytical and practical direction for renewing the European project.

Locating European objects

European objects are discussed in the institutional arenas through which European legislation is produced. The European Commission submits propositions for new European legislation to the European Council and the European Parliament, which then act as legislative bodies. The European texts and their applications may be contested before the European Court of Justice. However, discussions about European objects take place beyond these formal institutional processes. The machinery of the European Commission involves an intricate dynamic of internal and external consultations that is activated before any proposal is submitted. It functions in conjunction with numerous expert groups and consultation committees in which Member State and stakeholder representatives participate[6]. Once issued, the directives and regulations often provide only general considerations, which then need to be refined. This is the case of consumer goods, following the so-called "New Approach", according to which European legislation provides only guidelines that are the basis for standardization undertaken at the European Committee for Standardization (CEN)[7]. Expert agencies might also be in charge of implementing the European legislation. For example, the European regulation of chemicals (REACH) tasks the Helsinki-based European Chemicals Agency (ECHA) to evaluate registration dossiers submitted by companies, which means that the ECHA is directly involved in discussions pertaining to the description of chemicals[8].

In all these instances, European objects are not discussed for the sake of it, but with particular objectives in mind, such as: organising the Single Market, labelling products, banning hazardous chemicals, or defining environmental conditions for air or water. These objectives require actions undertaken for the sake of governing European objects.

[6] At this point, one can refer to the term "comitology", which European scholars and European officials use to denote a form of collective negotiations conducted within technical committees hosted by the European Commission, in which representatives of Member States and interest groups participate.

[7] Borraz, 2007

[8] Boullier, 2016; I will get back to REACH and the example of chemicals in Chapter 6.

Throughout this book, I will call these actions "European interventions" [9]. They comprise devices, such as labelling and standardization, designed to organise the European market, as well as the mechanisms expected to evaluate and control risky entities. These devices are policy instruments in the sense that Lascoumes and Le Galès use. They "are not tools with perfect axiological neutrality, equally available; on the contrary, they are bearers of values, fuelled by an interpretation of the social and by precise notions of the mode of regulation envisaged"[10]. As such, they imply sensitive decisions, likely to impact the actors involved, and are explicitly discussed when regulatory categories are crafted. For example, setting standards intended to allow consumer goods to circulate on the European market implies that certain objects are included and others excluded. Defining technical criteria for chemicals, water or air directly impacts what companies and public administrations in Member States will have to do. In turn, the arenas in which European interventions are debated are places where European objects are brought into the discussions. Consider for instance questions such as: should European policy label chemicals or exclude them from the European market? Should food products be protected and if so, how? Should energy be considered a market object equivalent to the consumer goods expected to circulate on the European market? These questions directly impact the European interventions and the objects on which they are expected to act. They show that studying European objects can be a way of analysing the European regulation in action[11].

This latter consideration points to an important aspect of our study of European objects, namely that European objects matter if they are more than pure bureaucratic constructs. Accordingly, there would be little analytical value in limiting our analysis to the categories introduced in regulatory texts. STS scholar Javier Lezaun spoke about the "pragmatic sanction of materials" to point to the connection between regulatory categories and material practices:

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[9] This definition implies that European interventions originate from the European institutions, above all the European Commission. This means that the approach I choose differs from that the historians of technical infrastructures who have examined integration not as a product of institutional interventions stemming from EU institutions, but as an outcome of the gradual extension of railways, highways, and telecommunication networks, which started well before the 1956 Treaty of Rome and has progressed in parallel, more often than not in distant relation to the institutional process of European construction (Misa and Schot, 2005).

[10] Lascoumes and Le Galès, 2007: 4

[11] Smith, 2010

> *The pragmatic sanction of materials is thus never a matter of applying a legal principle to a singular object, of fitting the abstract ideal to the mundane exemplar. Nor is it a mere attempt to embed a value - legal or otherwise - in a piece of matter. It is, rather, the manufacture of radically original legal substances, substances that allow the law to become of the world.*[12]

The language might be theoretical, but what it describes is a practical problem for the actors involved, and an empirical resource for us as we study would-be European objects. When they talk about regulatory categories, regulators, company directors and experts do not seek to apply an abstract legal principle on yet another chemical or food product, nor do they seek to label an already singularized object. Rather, they attempt to craft an entity that could provide meaningful ways of regulatory action. This implies that actors need to discuss the practical dimensions of European interventions to sustain or contest the categories they argue for or against. Examining European interventions is, in turn, a way of us to analyse European objects. For example, I will discuss the case of energy in Chapter 4, and particularly the objective of "unbundling" the ownership and operation of energy production and distribution. This is a European intervention meant to turn energy into a European market object. While European texts often imagine desirable marketplaces for European electricity (including a new one for "green" electricity) where supply and demand freely meet, the fact that electrons circulate on networks in ways that cannot physically be monitored and controlled, introduces a disruption in this ideal vision. This case, like many others explored in this book, illustrates the close connection between legal productions and material practices that sustains European objects. If they are to make a difference, European objects cannot remain pure discursive bureaucratic creations, nor entirely material constructs. They are mixed constructs, which associate material components in the physical sense of the term, and discursive elements originating from legal sources.

Problematizing European objects

The following chapters will contribute to clarify the objectives and modalities of European interventions targeting construction products, food products, financial instruments, energy

[12] Lezaun, 2012: 38

sources or chemicals. They are not, however, an exhaustive review of *all* European regulations of technical objects. The task would be daunting, and there is little chance that it would provide convincing elements to challenge the narrative of the meaningless bureaucratic Europe. And a mere expose of European laws, their rationales and consequences would not be enough for us to understand why the imaginative novelist or the unscrupulous politician can so easily oppose the cold European bureaucracy and the texture of everyday life, the multiplicity of obscure administrative actions and the simple clarity of political will. Understanding Europe's current democratic issues and envisioning potential ways forward requires a deeper analytical exploration, able to identify who is supposed to benefit from the European intervention, who is involved and who is excluded, whose concerns are addressed, and, ultimately, what Europe is deemed desirable.

To do so, we can start our explorations from the arenas in which European objects and the corresponding European interventions are discussed. They are the places where these objects are deemed problematic, because of what they are and what they entail for the European intervention. In other words, there are the sites in which European objects are problematized. The term "problematization", stemming from Michel Foucault's work as well as Science and Technology Studies (STS), points to the mechanisms whereby problems are defined and the range of acceptable solutions made explicit[13]. Foucault used it in his late works on the history of sexuality, to point to the mechanisms whereby sex was constituted as it was turned into an object of concern. His study of problematization proposes that we shift the analytical attention away from the issue of representation. His analytical question is not "is the discourse about sex a correct representation of the reality of the human self?", but "what human self is imagined when sex is constituted as a problem?". Thus, instead of asking whether or not European objects as discussed in the arenas outlined above correctly represent what would be "real" material entities, I ask: "how are European objects defined when they are constituted as topics of concern?". Thus, the arenas in which I will conduct the analysis of European objects are "sites of problematization", that is, the various places

[13] See Foucault, 1984; Callon, 1980; Callon, 1986; Rabinow, 2002; and a discussion in Laurent, 2017. The role of problematization in the European Commission's policy-making process has been discussed by Andy Smith (2013).

where European objects and the corresponding European interventions are explicitly discussed as problems to be dealt with[14].

Focusing the analysis on sites of problematization of European objects means that, in the language of policy analysts, I am more interested in "policy formulation" than in "policy implementation". I therefore do not look at how industries deal with new regulatory constraints introduced in categories aiming to define chemicals or food products, or how national public administrations adapt to European regulation[15]. But the very opposition between "policy formulation" and "policy implementation" is at odds with the study of European objects that I conduct in the following chapters. First, analysing problematization implies that one examines how considerations related to "implementation" are brought into debates about "formulation". Actors routinely argue for or against regulatory choices, by referring to what they will entail when implemented. And the sites in which policy "implementation" is contested, such as the European Court of Justice, are also places where what European objects are and do is questioned. As European objects are problematized, so are the European interventions deemed appropriate. Second, and more importantly, the language of "formulation" and "implementation" suggests an analytical question related to the evaluation of the discrepancy between what European policies state, and what they achieve in practice. There is clear value in such a question, which is explicitly asked by many actors involved in European regulatory settings. But in studying the problematization of European objects, I ask a different question. Rather than asking: "Does the European regulation of European objects do what it is said it would do?", I ask: "What problems does it seek to address?", and "what 'European objects' and what 'European interventions' does it undertake when doing so?". This means that the politics of European objects is analysed in particular ways, as I will now discuss.

The politics of European objects

Defining European objects and acting on them implies negotiating technical criteria that have direct consequences. Defining what technical entities are is never a neutral process in

[14] On sites of problematization, see Laurent, 2017

[15] See the rich landscape of studies on the "Europeanization" of domestic policies (Featherstone and Radaelli, 2003; Héritier et al., 2001; Knill, 2001).

this context, as inclusion or exclusion from a regulatory category might mean including or excluding products from the European market, or extending the perimeter of action of constraining legal actions such as labelling or risk studies. It is therefore not surprising that the sites in which regulatory categories are discussed are particularly prone to lobbying, as member states, companies and other stakeholders defend their interests by anticipating the effects of future regulation.

There is a politics of making European objects in that regard, related to who is involved, and who benefits from certain choices. In that sense, sites in which regulatory categories are made offer an empirical lens to examine struggles between stakeholders. That these struggles happen behind closed doors is connected to the particular position of expert debates in European circles, expertise being a way for stakeholders to negotiate, and for lobbying to be exercised[16]. As described through the important body of work that has examined lobbying practices connected to the making of European regulations[17], creating European objects is a political game, where the resources needed to play are unevenly distributed, and where particular stances regarding a category are directly connected to how the actors define their interests. In that sense, examining the elaboration of regulatory categories and analysing debates about the appropriate European interventions will provide elements illustrating this political game. We find industries, non-governmental organisations and member states arguing for or against a particular category, in disagreement about the feasibility of an intervention, or contesting the need for regulatory action all together. They argue in expert groups and/or through the numerous lobbying activities occurring at the Commission or the Parliament when new regulations are prepared. They may also intervene at the European Court of Justice to contest European regulation. In doing so, these actors show where their interests and values lie, and attempt to shape regulatory choices to their benefit. In a sense, the study of European objects is a vehicle for exploring European negotiations in action.

But this is not the only layer of the politics of European objects, because how the problem of European objects is posed is never neutral. Consider the operations needed to define regulatory categories. Categories can be defined using thresholds, and we will see that a

[16] On expertise in the European institutions, see: Saurugger, 2002; Robert, 2010

[17] There is an abundant literature on lobbying in the European institutions. I come back to it in Chapter 5.

form of regulatory action based on thresholds is indeed regularly used in Europe (Chap. 8). Making categories might also imply that several cases are examined one by one, or that a general category is introduced. We will see in Chapter 6 that when chemicals are discussed within European institutions, a frequent problem relates to the possibility of adopting a case-by-case approach whereby each substance is examined, or creating large categories such as “nanomaterials” or “endocrine disruptors”, thus potentially reshuffling how chemicals are controlled. Hence, certain styles of category-making imply that certain objects are constituted and not others. This means that how to act on European objects is controversial in many cases. The following chapters analyse numerous conflicts about the appropriate European intervention. For instance, Chapter 2 shows that the conditions under which construction products should receive “CE” marks are vehemently contested. Officials at the European Commission in charge of regulating construction products consider that the CE marks should be granted to all construction products expected to circulate on the European market, while representatives of member states and the construction industry propose to tie them to technical characteristics that ensure their quality. Chapter 2 discusses this conflict as an opposition between the European Commission envisioning a unified European space of competition, and national actors considering that markets should be locally embedded – propositions that are seen as disguised attempts by the European Commission to reintroduce trade barriers. Conflicts such as this one show that European objects can sustain various European interventions.

In many situations the very idea of acting on objects is itself problematic. Whether or not policy issues should be dealt with as a matter of making European objects is indeed a sensitive question. Protecting a food product by tying it to a regulatory category protecting geographical origin in European law implies standardizing production processes and the food product itself, which may benefit some actors over others (see Chapter 3). Implementing environmental policy through immaterial market entities such as permits and certificates is based on new and often unstable European objects. It implies that environmental issues are significantly rewritten, so that dealing with them using quantitative mechanisms becomes possible (see Chapter 4).

In other terms, understanding the politics of object-making requires that one analyses the consequences of defining and acting on objects in particular ways. Here, one can build on

works in Science and Technology Studies that have shown that making categories is a political undertaking in a deep understanding of the term, pertaining to the organization and meaning of everyday life[18]. The instruments needed to make categories, such as standards and labels, do more than just describing the world, possibly by reflecting existing social interests. They are also "recipes for reality", in Lawrence Busch's terms, in that they create certain technical and social identities a at the expense of others, open up certain possibilities for action and close down others[19]. In that sense, making categories is a "coproduction" bringing together ontological and normative operations[20]. Regulatory categories are particularly interesting in that regard, insofar as they entangle the functioning of legal institutions with the technical interventions needed to shape technical problems. The notion of problematization allows us to analyse such coproduction processes. Problematizing implies constituting particular technical and social realities that correspond to the problems deemed important, and to the range of solutions considered appropriate. Problematizing European objects also means defining them, and displaying the desirable values one should pursue in acting on them. In previous works, I have shown that sites of problematization are indeed sites of coproduction: problematizing emerging technologies is also problematizing the political organisation expected to deal with them[21]. The question to ask, then, is a broad one: for the sake of what political organisation are European objects problematized?

A dream of market harmonization

As we focus on European objects, we will see how delegates from Member States, officials at the European Commission, members of NGOs and representatives of companies struggle around such as questions as: How to expand or limit the scope of European power? How to craft legitimate modes of government? For the benefit of whom? The answers to these questions often refer to the overall perspective of "harmonization". Harmonization is a term used in diverse contexts, now part of the vocabulary used within the European institutions

[18] Bowker and Star, 2000; Epstein, 2007

[19] Busch, 2011

[20] Jasanoff, 2004

[21] Laurent, 2017. This perspective originates from STS, but also echoes the critical legal studies of European integration, particularly those that consider that law is not "a ready-made instrument, exterior to and separable from a European 'policy' or 'society' to which it might be applied", but has a "constitutive dimension" (Vauchez, 2014, my translation).

to describe the European project. It relates to the integration of the Single Market, but also to the possibility of ironing out differences across Europe, for instance in controlling risks. Harmonization plays on similarity and difference, as it seeks to create a space of competition where individuals, companies and territories can be participants in a fair market game[22]. Thus, it relies on a "cohesion policy" meant to "support the overall harmonious development of Member States and regions"[23], and refers to an ideal Europe of evenly distributed economic prosperity. Yet it might also represent the worst of European construction, as a faceless bureaucracy imposes constraining regulation with little democratic oversight, to the dismay of people attached to local particularities.

Harmonization is, in the words of Andrew Barry, "an art of European government", whereby regulatory action is conducted and attempts at reducing variations across the Union are undertaken in various policy domains[24]. This art of European government should not be understood as a perfectly functioning machinery. Rather than an already well-entrenched state of affairs, harmonization is an expected outcome of European interventions that are not always successful. Harmonization might be better described, in Sheila Jasanoff's terms, as a "sociotechnical imaginary", that is, an "imagined form of social life and social order that centres on the development and fulfilment of technological projects"[25]. The language of sociotechnical imaginary is useful to analyse harmonization, because it suggests that harmonization has a dream-like quality, that of a project not always well articulated, and at best imperfectly realized by existing practices. Throughout this book, we will see that what this dream is and what it entails can be observed when analysing European objects and their problematization. The two parts of this book correspond to two dreams of harmonization, sometimes aligned, sometimes in tension. As the following chapters show, these dreams can be identified when analysing the sites of problematization of European objects, and the connections and similarities among them.

The first one is also the most visible, and the most clearly undertaken. This is a dream of disentanglement. It consists in envisioning European interventions as initiatives meant to

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[22] For a detailed comment on the notion of competition in European construction, see: (Davies, 2016).

[23] https://ec.europa.eu/regional_policy/en/policy/what/glossary/c/cohesion-policy last accessed April 1st, 2019.

[24] Barry, 2003

[25] Jasanoff and Kim, 2015

ensure that European objects circulate on the European market. These initiatives envision the European market a distinct domain of social life, expected to be distinguished from policy negotiations while a direct outcome of conscious regulatory interventions. The disentanglement at stake in the European case has both an institutional and a material dimension[26]. It refers to the institutional work needed to distinguish the functioning of the market from policy-making. It also points to the extraction of objects from their local contexts of production and use, so that they become European and fit for circulation as market entities. Chapter 2 thus shows that the disentangling of European objects expected to circulate on the Single Market operates by setting boundaries. Some are expected to define objects freed from their national ties, while others are intended to isolate standardisation from negotiations deemed political. European objects are thus expected to be disentangled from their local conditions of production and use, and the technical operations meant to ensure that the market functions are expected to be disentangled from the political domain. This problematization of European objects envisions the European citizen as an economic agent that, whether a producer or a consumer, exercises his or her choices across a European space defined as a space of competition. Here, making European objects is linked to the integration of the Single Market and thus extends beyond the European Union[27]. It is manifest in the use of standards as policy and market instruments[28].

The objective of harmonization is explicit in this case, as an ideal mode of government of the European market, and a reference for the European polity. It faces fierce opposition, but remains appealing. One of the reasons for this stems from the fact that it has offered a powerful way of extending the perimeter of European policy interventions. In Chapter 3, I discuss how objects such as food products, tobacco products, financial products or hazardous waste have been turned into European objects. I show that they became European when additional characteristics (or "qualities", to use a term used by sociologists

[26] Although one could think of the notion of "disembeddedness" in this context, I prefer not to use the term. Since Karl Polanyi spoke about the embeddedness of the market in social institutions, the concept has been much discussed in economic sociology, often in ways that follow other paths that those travelled by Polanyi (Beckert, 2009). Rather than delving into a theoretical debate about the notion of (dis)embeddedness that would bring little to our understanding of European harmonization, I use the term "disentanglement" to point to the dual institutional and material dimension of the extraction of European market objects.

[27] The Single Market covers the member states of the European Economic Area.

[28] Borraz, 2007; Jasanoff, 2013; Joerges, 2013

of market[29]) were added to their descriptions as European market entities. These European objects circulate on markets, and their ability to do so makes it possible for the European intervention to act on them and through them in new domains, such as rural development, health policy, or financial stability. Chapter 3 analyses how market harmonization has provided a legal and moral grounding to numerous European interventions, and a practical way of extending European policy interventions at the cost of pervasive interrogations about the possibility of its democratic oversight.

Disentanglement is not an easy task though, and some European objects have proven to be particularly tricky in that regard. Chapter 4 comments on various attempts at turning energy (and particularly "green" energy) into a European market object. As they constitute flows of electricity or fuel, electrons and carbon-based molecules cannot easily be tracked or differentiated from one another. These material characteristics make energy particularly resistant to disentanglement. While this situation has actually reinforced a European commitment to harmonizing markets, it has also resulted in failed attempts at introducing harmonized immaterial entities carrying the green value of energy. This example is one of the many cases showing that making European objects for the sake of the European market encounters numerous issues. Some of them are linked to practical difficulties. Others relate to opposition to the European interventions on technical and economic grounds, but also, and perhaps more importantly, to their consequences in terms of democratic checks on European executive action.

Disentanglement is the consequence of the initial project of European integration that made market integration the means of European intervention, the overall objective of integration, and the source of legitimacy for European institutions. Acting on market objects and using them to pursue other policy goals has been a preferred mode of European intervention. We will see that it functions on an imagined boundary separating the standardization of objects from political decisions. This boundary has its own politics, and the objective of market harmonization is often criticized for its (un)democratic consequences. Examples such as energy will illustrate cases where political issues are explicitly re-connected to the standardization of European objects. Whether this re-connection offers a renewed

[29] Callon et al., 2002

perspective for harmonization is then a question to ask. The exploration of a second, and even less stable, dream of harmonization will help us to do that.

An elusive dream of objectivity

The dream of disentanglement imagines that whole chunks of social life can be separated from political discussions, as it makes the market an objective and a means of European intervention. A second dream of harmonization also expects to extract parts of social life from politics. This second dream is that of objectivity. It is based on science, and is particularly visible when European objects are regulated because of the risks they cause or are to be protected from. These risks are evaluated by scientific methods, and require the mobilization of expertise. Here, harmonization is not only about the market; it is also about the ability to describe European objects in scientific terms. That science can provide a universal language above local contingency is a common trope of modernity, and a definite (if problematic) characteristic of liberal democracy[30]. In Europe, it is regularly summoned to settle controversies, and to participate in the constitution of an objective voice to ground the legitimacy of European interventions. The second part of this book shows however that European objectivity is an elusive dream. Commenting on situations where technical expertise is required to shape European objects, Chapter 5 discusses attempts at ensuring a "European objectivity", that is, a convincing scientific evaluation of technical objects conducted by legitimate European institutions. These attempts have rarely been successful, and are always contested. Chapters 6, 7 and 8 analyse examples of European objects that illustrate the ambivalence of European objectivity, and the uneasy relation it has with the expected disentanglement of the European market.

Chapter 6 discusses the case of chemicals, showing that a dominant type of European intervention is a case-by-case approach that mixes technical examination and political discussions, and consists in creating a new regulatory category for each new "case" of chemicals. The chapter uses the term "regulatory precaution" to analyse this intervention, showing that it is a proposition for both European objectivity and European decision-making, whereby the construction of regulatory categories is also a platform for negotiations

[30] Ezrahi, 1990; Latour, 1991.

between stakeholders. This approach is contested by proponents of constraining legal approaches, as Member States and the European Parliaments seek to introduce large and stable regulatory categories delineating sets of substances expected to be excluded from the European market. The controversies about chemicals show that how to operate the precautionary principle is still debated. They also demonstrate that if regulatory precaution redefines the mobilization of scientific knowledge and the organisation of the market, it is hardly made explicit as such.

Chapter 7 focuses on the European environment and on interventions designed to protect it. It analyses a mode of governing the European environment based on the establishment of thresholds, usually of pollutants, and contrasts it with European interventions intended to remove thresholds by creating a market of "best available techniques" for limiting pollutant emissions. These two approaches allow me to discuss re-configurations of objectivity and disentanglement. The establishment of thresholds is less a matter of claiming that a European decision is objective, than of setting up modalities of action that make political negotiations possible. The use of market-based instruments to govern the European environment does not imagine a neatly disentangled market, but tightly woven market operations with negotiations among stakeholders.

Chapter 8 examines European reactions to financial and nuclear crisis framed as interventions on European objects (banks and nuclear plants) based on "stress tests". It discusses the extension of the European ability to monitor and control these objects, in ways that differ significantly. While the European Central Bank (ECB) acts as a centralized body of expertise acquiring new regulatory competences to control banks, nuclear plants are tested by diverse European teams. The official narrative of these interventions is that the objective and transparent evaluation of banks and nuclear plants will ensure a renewed trust in the robustness of technical systems. What "objectivity" and "transparency" entails is then a matter of investigation: certain objects are constituted rather than others, and transparency implies that certain beneficiaries of European interventions are imagined, and that some elements are kept opaque. As a result, the complexity of large-scale technical systems in crisis is turned into a problem of governing individual objects, such as banks seen through the investor's gaze, or nuclear plants threatened by natural disasters, and wider political issues are kept at bay. The crisis might well provide an opportunity for furthering European

integration. Yet whether this is done in ways that displace the existing dreams of harmonization is not guaranteed.

The examples that I will analyse chapters 5 to 8 show that objectivity is an elusive dream of harmonization, and that many European objects are governed in ways that explicitly articulate scientific evaluation and political negotiations. Approaches such as "coexistence", "regulatory precaution", or "distributed stress tests" can be regarded as attempts to take variation into account, and possibly to redefine the basis of European objectivity. Whether these approaches offer renewed perspectives for harmonization is then a question to ask.

Whose dreams of harmonization?

The overall perspectives for harmonization are not always formulated in explicit terms, and even less so when they do not adopt the language of the neatly disentangled market or that of universal science. It is the task of the analyst to connect discourses, policy instruments and their practical uses, in order to make these perspectives for harmonization visible. This is what the following chapters will undertake by examining European interventions on objects and the debates and conflicts they have raised. The European Commission and its associated bodies will be the main protagonists in these explorations. By many respects, the dreams of harmonization indeed originate from the European Commission. This directly raises the issue of who participates and who benefits from the European interventions based on objects. If harmonization is conducted through objects crafted in Brussels' arcane procedures, then what about Europe's political subjects?

An important literature in political science and European studies has examined this question by studying phenomena occurring far from Brussels politics. Thus, scholars of the European "socialization" have sought to shift analytical attention away from the discourse of European institutions in order to study the construction of a would-be European society[31]. Neil Fligstein's analysis of the *de facto* and unequal integration through economic exchanges and the circulations of people and ideas shows that the stated objective of integration faces a fractured reality of actual integration, happening in connection with, but not necessarily as a

[31] Favell and Guiraudon, 2009; Rumford, 2008

direct consequence of, European regulation[32]. This book adopts a perspective that differs from these contributions. It contends that any intervention on European objects is also about human subjects, as expected beneficiaries. This hypothesis builds on STS works, not only about technical objects and their scripted users[33], but also about how policy programs imagine various subjects[34]. Thus, when European objects are standardized for circulation on a market expected to be neatly disentangled, then the intended beneficiary of European interventions is an economic agent defined by her ability to choose consumer goods. When European objects are problematized as technical entities in need of objective evaluation, then the imagined European subject is an individual ready to trust experts to deliver technical assessments.

The important question then is: what about the subjects that are left out? The literature in political science and European studies provide resources at this point. By examining the social characteristics of the European officials, the trajectories of European experts[35], the role of Commissioners and their relationships with other European actors and national stakeholders[36], or the influence of policy networks and their interactions with the making and implementation of E.U. policies[37], these works display the social identities of the participants in European policy-making, and demonstrate that certain actors are more powerful than others in shaping decisions. These approaches have spurred a trend in European studies that seeks to uncover relationships between certain positions of social actors and decisions taken at European level. Some have spoken of a "political sociology of Europe"[38] to describe an analytical approach that empirically account for the relationships between social groups and European decision-making. The proponents of this approach are often critical of another trend in European studies labelled as "constructivist", which seeks

[32] Fligstein, 2008

[33] Akrich, 1992

[34] See for instance the important body of work about the imagined participant in European science policy (Felt, 2010 ; Felt and Wynne, 2007 ; Jasanoff, 2005) ; and the construction of European publics through instruments such as the Eurobarometer (Jasanoff, 2005 ; Law, 2009).

[35] Michel, 2002; Robert, 2010; Saurugger, 2002

[36] Smith, 2003; 2004

[37] Smith, 1995

[38] Guiraudon, 2003; Favell and Guiraudon, 2009; Kauppi, 2003; for a review of the contribution of French scholars to this approach, see: Georgakakis, 2009.

to isolate cultural or discursive influences behind European decisions[39]. In turn, scholars from the constructivist side have refined studies of the articulation between "state, society and the individual"[40], and others have attempted to show that the influence of "representations", "ideas" or "discourse"[41], can be complemented (and have been) by analysis of "how actors use ideas strategically"[42].

What I take from these scholarly debates at this point is an invitation to analyse the European subject in the name of whom European interventions are conducted, and who can benefit from them. In the following chapters, I undertake this analysis not by focusing on a particular group of actors, or by exploring causal relationships between social or cultural factors and European decisions, but by showing that conflicts about European objects are also conflicts about who the European subject is and ought to be. We will see that the tensions that emerge from European interventions targeting objects, and of which the narrative of the European bureaucracy is an illustration, are also about the desirable European polity. This reveals the difficulty in imagining European publics in other terms than the economic agents acting on the harmonized market, or the trustful individual delegating technical issues to experts. Some of the European interventions we will encounter have had to take the particularities of objects into account, for instance the uncertain risks of chemicals, or the material characteristics of energy flows. In doing so, they re-invent the practice of harmonization, by mixing together the organisation of markets, the conduct of technical expertise, and political negotiations. As such, they might offer perspectives to re-define the identity of the European political subject. As we explore these perspectives, we will also need to analyse the constraints these potential alternatives face, and at what costs other European political subjects could be envisioned.

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[39] In some of its formulations, constructivism uses a hypothesis that a critical commentator formulates in those terms: "governmental elites choose specific policies, policy ideas, strategies, and concrete interests because they (or their justifications) are consistent with more general, deeper, collectively held ideas or discourses." (Moravcsik, 1999: 670). Critics see a significant difficulty in demonstrating the causal ("because") relationship between choices made by governmental elites, and "general, deeper, collectively held ideas or discourses". The proponents of the political sociology of Europe based on detailed analysis of social groups and trajectories have been critical of "constructivism" because of its lack of empirical evidence, and its "weak theory of agency" (Favell and Guiraudon, 2009; Kauppi, 2003)

[40] Rumford, 2008

[41] Riesse, 2004; Roswell and Mangenot, 2016

[42] Saurugger, 2013a

Seeing and acting through objects

When the European institutions see complex issues through the lens of objects, they inevitably narrow their vision as they acquire abilities to intervene. James Scott's words come to mind here:

> *Certain forms of knowledge and control require a narrowing of vision. The great advantage of such tunnel vision is that it brings into sharp focus certain limited aspects of an otherwise far more complex and unwieldy reality. This very simplification, in turn, makes the phenomenon at the center of the field of vision more legible and hence more susceptible to careful measurement and calculation. Combined with similar observations, an overall, aggregate, synoptic view of a selective reality is achieved, making possible a high degree of schematic knowledge, control, and manipulation.*[43]

Defining and acting on European objects is "a form of knowledge and control" that is undertaken at the European level. It makes it possible to envision European interventions while necessarily reducing complex issues to matters related to objects. It is meant to be a vehicle to pursue the long-term objectives of disentanglement and objectivity, even if it gives rise to more complex constructs in practice.

The above quote is also a forceful reminder of what the perspective advocated here entails. It could, after all, be applied to this very book. We need to ask: what don't we see when we look at objects? The previous considerations lead me to consider that we can actually see a lot. But this analysis does not capture *all* the forms of European policy action though. Regional development, justice or external affairs have become domains of European intervention that do not directly relate to technical objects. Approaches to harmonization such as the Open Method of Coordination (OMC) propose to use instruments such as benchmarks or self-reporting to ensure that Member States voluntarily converge towards common policy goals (such as R&D or social spending)[44]. As these examples show, there are European interventions that do not target objects. They are not the primary focus of this book, but we will see that some of them are transformed when European objects are introduced – as for instance, the protection of food products is hoped to become an engine

[43] Scott, 1998: 11
[44] Radaelli, 2003

for rural development, and the re-organisation of the Common Agricultural Policy (cf. Chapter 3).

More generally, the fact that there are other types of European intervention than those based on objects should direct our interest toward a wider question: what does it take to turn political issues into a problem of European objects? In the following chapters, we will encounter conflicts relating to the very fact that complex policy issues should be dealt with by making European objects, instead of adopting other approaches. For instance, I analyse the European responses to contemporary crises (in Chapter 8), or to sustainability issues (in Chapter 7), and show that these responses were based on the making of new European objects, or on the redefinition of existing ones. This happened much to the dismay of proponents of a general overhaul of the European approach to industrial, environmental or economic policies. But objects also offered a path for action at the European level, that no other regulatory approaches could have provided.

Scott's words in the quote above apply well to scientific practices, where the reduction of complexity also provides means for vision and action[45]. In policy contexts, the means for vision and action granted by regulatory interventions based on objects might not be as powerful. But still, if seeing and acting through objects eliminate alternative views of the world, it also provides the European institutions with a lever of action. If turning large-scale policy issues into problems of object-making is such a lever (and we will see it is the case), then we can ask: is this lever always associated with the dreams of disentanglement and objectivity? And, if not, can it provide resources for a renewed European project?

Thus, if European objects necessarily imply a "narrowing of vision", both for the European institutions acting on them, and for the analyst studying them, they also make it possible for the European actors to envision a wide range of policy interventions, and for the analyst to examine the challenges that European harmonization faces. European objects can then appear as entry points for a reflection about Europe that cuts across various policy fields. Whether this reflection can take the format of yet another "theory of Europe" is debatable, in a context where European construction has been the topic of many theoretical developments. The field of European studies is crisscrossed by pervasive references to "theories of integration", and scholars in the domain often engage in theoretical elaboration

[45] See Latour, 1995

and meta-discourses about what "theories" are and what they entail[46]. These theories have evolved alongside European construction, and in many respects contributed to shaping it[47]. They have proposed various analytical frameworks through which the regulatory choices made by European institutions, if not the whole dynamics of European integration, can be explained[48]. The study of the problematization of European objects does not concern itself with the elucidation of causal relationships, and even less so with the elaboration of explanatory models that could circulate from one case study to the next. In that sense, it is not a "theory". But it does point to a series of empirical sites where the modalities of European interventions and the sources of their legitimacy are questioned. As such, it offers a path for a study of how Europe is governed, in ways that examine the practical functioning of its institutions and how they imagine their beneficiaries and their priorities. Thus, the study of European objects is a proposition for understanding the current challenges that the European Union faces, and possibly a vehicle for re-imagining its future evolutions. This task is crucial in an era when the European harmonization project does not seem attractive to many across the Union, as its means of action and horizons of progress, science and the market, are called into question.

[46] Saurruger, 2013b

[47] Robert and Vauchez, 2010; Vauchez, 2014

[48] It would be a daunting task to map the lengthy debates about which theory is the most appropriate to understand European construction. This mapping exercise could lead us to sophisticated discussions about what a "theory" is, and what it means to say that it "explains" something. For a detailed review, see: Saurruger, 2013b.

Chapter 2. The power to disentangle

Since the 1956 Treaty of Rome, the internal market has been both an end and a means of the European integration project. Its functioning and extension are primary objectives for the European institution, while it also serves as an instrument expected to take Europe forward on the path of social, economic and political progress. As scholars of European integration have noted, constructing and regulating the internal market requires that power and responsibility be granted to European institutions – an operation that has proven to be technically challenging and politically contentious. It also requires acting on objects, so that they are granted the ability to circulate within the European market.

The so-called *New Approach*, which, in the 1980s, re-defined European regulation of the internal market, can be seen as an answer to the issue of market regulation, depending both on the institutional fabric of European legal power, and on robust definitions of the technical entities that are meant to become market objects. The New Approach combines two operations, namely the mutual recognition of member states' standards for market products, and the delegation of European standardization to the European Standardization Committee (CEN) in charge of operationalizing the general perspectives stated in European laws. As such, it limits the content of European legal texts to broad considerations, while leaving the technicalities of standard-setting to private actors and member states. The boundaries introduced with the New Approach (between European institutions and member states, public and private interventions, political considerations and technical operations) have redefined the arrangement on which the regulation of the internal market, and the objective of eventual harmonization, were based[49]. They made standard-setting a crucial component of the internal market, as it became a platform for negotiation among stakeholders, and an instrument for the delegation of European power to member states and private companies.

[49] Borraz, 2007

As such, standard-setting is part of the more general approach of the European institutions to "governance", as set out in the 2001 *White Paper on European Governance* of the European Commission[50]. This *White Paper* has been widely commented on, since it lays out the conditions on which the Commission imagines the legitimacy and efficiency of its actions depend. "Governance", here, refers to the distributed arenas of negotiations with a diversity of stakeholders. It relies partially on the dual ability of the European institutions to delegate the technicalities of market organisation to private actors, and to maintain ongoing dialogue with stakeholders potentially concerned by changing trends in European regulations.

These changes, from the *New Approach* to the *White Paper*, have been commented on by scholars of European integration. Some see them as evidence of an original source of political legitimacy of European institutions, based on efficiency and the ability to meet the expectations of various stakeholders, eventually making the European Union a "regulatory state"[51]. Others consider the articulation of delegation to private actors, and negotiation with stakeholders, as components of a general neoliberal trend in which democracy is reduced to market interests[52]. For all their differences, these scholars show that initiatives such as the *New Approach* or the push toward "governance" originating from the European Commission challenge the very nature of the European intervention on markets and, more generally, the ways in which the legitimacy of European power to act is envisaged.

In this chapter, I examine the European power to act on the internal market through standards meant to describe and normalize technical objects. To do so, I have chosen the example of construction products and the "CE" mark. This example is related to one of the major economic sectors of the Union and to the main standardization activity at CEN. It has also spurred controversies, which have taken the form not of a Europe-wide public outcry, but rather vivid opposition within the regulatory and standardization committees. This type of opposition makes construction products one of the most explicit instantiations of a harmonization objective based on the disentanglement of European objects from their local ties, and an illustration of the many challenges that the practical achievement of this objective entails. Thus, we will see that the seemingly simple principles introduced by the *New Approach* and the *White Paper* (such as negotiations with stakeholders, delegation, or

[50] European Commission. 2001. *European Governance: a White Paper*. Brussels: COM(2001) 428.
[51] Majone, 1996
[52] Hermann, 2007, Shore, 2011

the separation between political mandate and technical standard-setting) rest on a significant extension of the perimeter of European intervention, and ultimately on a re-definition of the sovereign action of the European Commission. Lastly, this chapter also shows that the construction product example makes a particular European mode of action on markets visible. I describe this as a "power to disentangle".

Construction products and the European regulation

Construction products encompass a variety of objects, from tiles to cements, used in the construction industry. They are sold, circulated and used by a wide array of actors, including large multi-national companies, small enterprises, and individuals. Construction products constitute the main domain of European standardization activities. A quarter of the standardization activities at the European Committee for Standardization (CEN) are devoted to construction products. This standardization uses the CE marking, represented by the "CE" label affixed to them. Since 2011, construction products have been regulated in Europe by the Construction Product Regulation (CPR), which replaced a previous Construction Product Directive (CPD). The CPR lists "basic requirements" related to the whole building (and not the construction products themselves):

> "*mechanical resistance and stability, safety in case of fire, hygiene, health and the environment, safety and accessibility in use, protection against noise, energy economy and heat retention, sustainable use of natural resources".*[53]

The CPR proposes a system for the standardization of construction products that is based on two paths. First, in some cases, products are covered by a "harmonized European norm" developed by experts from private companies in the technical committees of the European Committee for Standardization (CEN, *Comité Européen de Normalisation*), after a mandate has been issued by the European Commission following negotiations with member states. In terms of the CPR, these products must adhere to the harmonized norm to be granted the CE mark. Second, when no harmonized European norm exists (e.g. when a product is innovative), producers may ask for a "European Assessment Document" (EAD) at the

[53] Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonized conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, Annex I.

European Organisation for Technical Assessment (EOTA), after which their products can receive the CE mark. Unlike the first route (used when a harmonized European norm exists), the second one is voluntary. The CPR was adopted in 2011, and was in full operation in 2013. Since then, the actors involved, be they member states, private companies, or European public bodies, have been caught in numerous discussions about the proper functioning of the regulation, and the appropriate implementation of the two routes for CE marking. This implementation has been so contentious that many of the actors involved acknowledge that the entire mechanism of the CPR and its related standards will take years to be fully operational.

In the following, I start by illustrating the vivid oppositions that have arisen from the CPR and its implementation. I show that these oppositions suggest the need to theorize the nature of European public action on markets. Delving into the details of the CPR and its attendant standardization activities, I discuss the ways in which the transformation of construction products into economic goods for European circulation within the CPR depends on their disentanglement from their local conditions of production and use. This disentanglement is also about institutional organisation, as it relies on an ability to separate political negotiations from the technicalities of standard-based market organisation. Finally, a focus on a particularly contentious provision of the CPR will allow me to discuss the power to disentangle that the European Commission needs to exercise in order to harmonize the European market of construction products. The power to disentangle, this chapter argues, can be seen as both a source and a consequence of the European intervention on markets.

Contested interventions

In January 2016, I met Henrik M., an official of the unit in charge of construction products at D.G. Growth of the European Commission. The first topic he discussed was the court cases that had framed EC action concerning CE marking. He mentioned several court cases that had been filed at the European Court of Justice to the benefit of the Commission and against member states' attempts at articulating national requirements to labelling practices. In the most recent one, Germany had lost to the EC as it attempted to request that companies use

a national mark to operate in the country[54]. As a trained legal scholar from Finland and, in his own words, a person who had "lived with the CPR for years", Henrik was well aware of the implications of these court cases. He argued that they displayed the sound legal grounding of the EC interventions in promoting CE marking as a way of lowering trade barriers. He pointed out to me a French legal term used by the European Court of Justice to ground its recent decision against Germany: the *effet utile* ("effectiveness") of the European regulation required that Germany dismantled the connections it had built between its national marks and the ability of companies to compete on the German market. Allowing Germany to use a national mark in this way would contravene the overall objective of the whole European approach to standards, that is, its *effet utile*, namely harmonization. Henrik believed that these legal precedents unquestionably established the primacy of CE marking. He considered that the ECJ had upheld the ability of the European Commission to impose the CE mark against the will of member states seeking to promote national standards. He saw these national marks as *de facto* trade barriers for the (possibly deliberate) goal of defending national companies.

This reading of an opposition between the European Commission and member states is not isolated. When I met them during interviews, many actors from the public sector or private companies described the intervention of the European Commission in connection with CE marking as a confrontation. Many of them maintained that the European Commission "wants to see nothing but CE marking", and was "at war with national quality marks". This was how an official of a French public certification body put it during an interview[55]. He claimed that the Commission had "an ideology" based on the will to impose the CE marking at the expense of any other types of labelling developed at the national level or by private actors.

Apparently confirming this reading of the situation, Henrik told me that "member states ought to understand" that the Commission was trying to fight against trade barriers, which tended to be opposed by companies that benefited from *de facto* trade protections. Harmonization, in his opinion, was the key objective, expected to ensure the "free movement of construction products" – as stated in the regulation itself and in numerous

[54] c 100-13 European Commission v. Germany
[55] Interview Paris, June 2013.

supporting documents of the European Commission. The objective of harmonization here seems to signal an opposition between the European institutions eager to use CE marking as a way of ensuring the free movement of construction products, and member states reluctant to get rid of national marks used (explicitly or not) as protection for national companies. The minimal success of the implementation of the CPR could then be seen as a result of this opposition: despite all their disagreements, all the actors taking part in the discussions about the CPR acknowledge that only a fraction of European harmonized norms that needed to be revised were cited in the European Official Journal (as they are supposed to be), and that the EOTA route has been even less successful, as no European Assessment Documents were released more than two years after the CPR was adopted.

This situation is an invitation to explore in greater detail the nature of the European interventions on construction products, and particularly the reasons why it appears so controversial that it cannot perform its intended tasks. Among the contentious topics linked to the CPR, the extent of power granted to the European Commission in implementing the European regulation seems to be particularly divisive. At first glance, the opposition seems to be between the EC fighting for the sake of the European market, and member states eager to defend their sovereign domains of action. This opposition is an obvious part of the story. But reading the situation as an opposition between the Commission's market ideology and member states' fight for political sovereignty should not prevent us from theorizing the type of market and the type of sovereign action that the actors involved imagine and attempt to achieve[56]. As the following sections demonstrate, the European Commission articulates its support for the European market with an understanding of its acceptable political interventions. In turn, the reaction of member states feeling deprived of their sovereignty goes with nationally located public support for economic actors and/or an idea of an efficient market. Accordingly, one needs to account for the type of political and economic ordering at stake in European interventions on markets – and, indeed, for the re-composition of the very definitions of such notions as "sovereignty" or "economic efficiency".

[56] Limiting the interpretation to an opposition between the Commission's market ideology and member states' fight for political sovereignty risks overlooking the fact that member states do not present a unified front opposing the Commission, but adopt various positions. The construction product area is not particular in that regard, as some member states, including the United Kingdom, opposed the shift from voluntary to mandatory CE marking, supported by France and Germany, when harmonized norms existed.

An economy without qualities

One of the main characteristics of the Construction Product Regulation (CPR) relates to the description of construction products required for standardization[57]. Harmonized norms or European Technical Assessments are supposed to list the "essential characteristics" of the products, such as "weldability" or "reaction to fire". These essential characteristics are defined by the technical groups of the European Committee for Standardization (CEN), and have to be complied with by producers wishing to affix the CE mark on their products. Producers are then asked to draw up a "Declaration of Performance" (DoP), which is added to the product packaging, and may differ between two products covered by the same CE mark. EOTA describes the particularity of the Declaration of Performance as follows:

> *Under CPR regime, the product is defined by the manufacturer in the Declaration of Performance with reference to the intended use(s), and harmonised technical specifications do not deal with application or use instructions any more.*[58]

All considerations related to "use", "applications" or "use instructions" are included in the Declaration of Performance written by the producer specifically for the individual product, while the standard itself is reserved for the product's essential characteristics. Under the CPR, harmonized norms and ETAs cannot refer to a particular use. These standards are not intended to determine the use of the construction product, but to provide a "passport for circulation on the European market". It is then up to consumers to read the Declaration of Performance in all its minute details, and choose the product that best suits their needs.

The hypothesis here is that it is possible to describe the technical "essence" of a construction product in a European standard, independently from its future use in a building. The official in charge of CPR at the European Commission explained this approach to me during an interview, and criticized the tendency of standardizers to "act as if standards were a list of requirements targeted to specific uses". He argued that the

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[57] This marks a shift from the Construction Production Directive (CPD) to the Construction Product Regulation (CPR). In the former, the description of the products was less restricted, and the use of harmonized norms was not mandatory.

[58] EOTA Report on the implementation of regulation EU 305/2011, 15.97.2014, available at https://www.eota.eu/ckfinder/userfiles/files/2015-07%20EOTA%20Report%20on%20implementation%20of%20the%20CPR_final(1).pdf last accessed August 2, 2018: p.7.

"purpose of the CPR" was to produce standards that "do not decide on anything other than technical contents, such as: assessment method criteria, factory production methods, etc.".

CE marking thus appears as a tool for "disentanglement". This term is used by economic sociologists to point to the processes whereby economic agents and economic goods are extracted from the ties that connect them to particular social contexts, so that market exchanges can occur. Standardization has been described as a means for disentanglement[59]. As Michel Callon explains[60], by qualifying goods with reference to norms, standardization "dissociates them from the agencies that are in a position to produce and trade them". In turn, standards contribute to framing a space for calculation of the expected value of the product (for the buyer), and of the expected revenue extracted from the transition (for the seller). Here, CE marking is indeed expected to make calculation possible, particularly by the consumer, who is provided with lengthy declarations of performance of CE marked products. Interviewed members of federations of companies or certification organisations described this approach as "liberal", and the term is worth looking at in detail. The approach is indeed liberal in that it leaves the possibility (and necessity) of choice to the consumer – be he or she an individual buying tiles or cement for his or her own use, or a small company contracting for house restoration. This approach is also "liberal" in that it grants responsibility to the producer, including legal responsibility. By affixing the CE mark on its products, a company attests that the product adherers to the declaration of performance associated with the mark. In so doing, it becomes liable if, for instance, a party wishes to sue it in court for lack of the declared performance.

The European standardization officials whom I interviewed regularly said that they were "frustrated" by the Commission's approach, and particularly by the insistence on separating the description of "essential characteristics" in harmonized norms from the "intended use", reserved for the Declaration of Performances. They often mention examples such as concrete, which can be used for decorative purposes or for building foundations. In this case, the particular use obviously impacts the technical requirements for the material being used. Examples such as this one are regularly used to demonstrate the difficulty in separating the "essential characteristics" of construction products and their uses described

[59] Callon, 1998; Caliskan and Callon, 2010
[60] Callon, 2006: 44

in the Declaration of Performance. Innovative products are particularly problematic for that matter, as products might be innovative because of new use *and* new technical specificities. In an interview, the former president of the EOTA (the organisation in charge of granting CE marking to innovative construction products) described the situation as follows:

> *It's even more difficult to separate essential characteristics and uses for innovative products! And, unfortunately, we're in the exact same logic: an exclusive focus on products. And Mr. M. [from the EC] goes so far as to say "the product as it comes out of the factory". But the product as it comes out of the factory is not the product in a building. Let me take an example: you won't use the same dowel depending on the concrete you want to put it in. Everything has to be configured according to use. And if you're not considering its use in the particular concrete you envision, then you can't characterize the dowel. (…) There's a whole set of how and why that determines the performance of a given product in a given building. But the Commission says no!*[61]

During the same interview, he then produced a slideshow he had presented at a standardization conference. His presentation used a mock example, yet one that was "representative of the current situation": an innovative, triangular window, expected to fit into traditional, square holes. How could one possibly, he asked me – as he had his colleagues a few months earlier –, define the "essential characteristics" of the innovative window, without at the same time describing the type of building it was supposed to be included in? Or, to rephrase this question in the analytical terms introduced above, how is it possible to disentangle this construction product from its particular use? The former president of the EOTA described the European Commission's insistence on "essential characteristics" as a concern that was "purely theoretical". As a self-described "technician", he moreover considered it as out of touch with the technical reality of building practices, and considered this perspective to be at odds with his understanding of what standards were for, namely making the quality of products visible, according to a well defined use. In a similar vein, the head of the construction product bureau at the French ministry of ecology characterized the insistence on "essential characteristics" as a way of describing "fictitious average products" (*produits médian fictifs*)[62] – an approach he was strongly critical of, for

[61] Interview, EOTA, Paris, July 2016

[62] Interview, Ministère de l'Ecologie, Paris/La Défense, July 2016

reasons that pertained to his understanding of the ways in which construction products are made and valued:

> *For dozens of years, everybody working in the construction sector has been saying that defining characteristics, testing methods (about mechanical resistance, fire, humidity…) (…) requires a starting point that is the experience gained by what we learned about successive uses in buildings. There are needs that originate from particular uses (…) and particular policy objectives, such as energy efficiency.*[63]

The former president of the EOTA and the head of the French construction product bureau expect standards to define goods targeted to particular situations of use. They imagine them as elements in a qualification process that configures particular producers and users, and singularizes products accordingly. They propose a description of standards that fits with what economic sociologists have called "the economy of qualities", whereby the particularities of concerns and needs are translated into standard-based sociotechnical systems allowing producers, products and users to construct particular re-entanglements[64]. By contrast, the EC made CE marking a tool for turning construction products into economic goods never qualified according to use, "without qualities", and meaningful only for the consumers able to decipher what product to use in their particular situation with the help of the Declaration of Performance[65].

If it is so frustrating for the actors involved, why would the European Commission impose this approach to standards? To understand this, one needs to connect the conditions of use as foreseen in writing a standard, and the particular conditions of production. Consider for instance an example provided to me during an interview with an officer at the European Commission in charge of the CPR. To illustrate what was, for him, an unacceptable way of writing standards, the officer mentioned a project for a harmonized European norm for cement that listed characteristics related to specific uses, each corresponding to one or several products of the major European companies producing cement. He explained that the standard "lists the thirty types that correspond to national cement compositions, and to what companies do". The would-be standard listed, for each of these types, the expected

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[63] *Ibid.*

[64] Callon et al., 2002

[65] He argued that even professionals, however well versed in construction practices they might have been, were unable to play the role the EC intended for them.

uses, each of which corresponded to the market offer of the company producing it. He described this draft standard as typical of "the old system", summing up the basis of standard writing in the "old system" in the following terms: "for this purpose, you use the cement of that type". He saw this as contrary to the current way of defining products for circulation on the European market. In the cement example, he saw the standard as the solidified description of what the group of major companies produced, thereby making it impossible for other firms to enter the market, and denying the European consumer the freedom of choice.

Thus, the objective of disentangling essential characteristics from conditions of use directly relates to a will to avoid reserving the standard for the products of specific companies. In other words, this approach is meant to disentangle the product from its conditions of production. One can then understand that speaking of the "essential characteristics" of the product is about separating its standardized description from the particular interests of companies or member states wishing to introduce what the EC understands as barriers to trade. Writing standards based on products' "essential characteristics" is a way of disentangling the product from its ties to the particularities of its sites of production. In this process, the standardized product is supposed to be defined independently of the economic interests obviously present when companies put construction products on the market, or possibly tacit when member states tend to protect national firms by supporting particular types and uses of products.

A disentangled polity

Defining the essential characteristics of a product requires a minimal agreement on what the product should be and how it should behave. This is the role of mandates, issued by the European Commission after negotiations with Member States, and meant to serve as basis for standardizers to write harmonized norms. What does the distinction between what is part of the mandate and what is left for standardizers to decide entail? We will see that this distinction has institutional consequences, and is related to a project of isolating the realm of market exchanges from considerations considered "political".

According to officials at the CEN and in industry organisations, mandates are notoriously complicated to write. The process is highly formalized, with a many-step workflow described at length in a three-part document supposed to serve as a *Vademecum on European standardization*[66]. The *Vademecum* was released in 2015 at the request of the European Parliament. Two of the issues raised by the Parliament were singled out in the *Vademecum*:

> *'The European Parliament, [...]*
>
> *15. [...] stresses that the European legislator must be highly vigilant and precise when defining the essential requirements in regulation, while the Commission must clearly and accurately define the objectives of the standardisation work in the mandates; stresses that the role of standardisers should be limited to defining the technical means of reaching the goals set by the legislator as well as ensuring a high level of protection; [...]*
>
> *22. Calls on the Commission to revise and rationalise the process to deliver standardisation mandates to European Standardisation Organisations, so as to include a consultation phase with relevant stakeholders and a thorough analysis that justifies the need for new standard-setting activity, in order to ensure the relevance of standard-setting and avoid duplication and the proliferation of divergent standards and specifications; [...]'*[67]

These two points target a crucial distinction at play in the European standardization processes, between "political" and "technical" phases. As the *Vademecum* states: "all political choices are to be made by the legislator"[68]. The "legislator" (as clarified later in this document) is the Council and the Parliament. This does not mean that only the legislator is involved in the political phase of standardization. In fact, the Commission is the main player insofar as it submits a written request for a standard (i.e. a "mandate"), following the regulation. And this is why it is so important that the Commission "include a consultation phase with relevant stakeholders", i.e. member states and private actors, since the mandate

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[66] European Commission. 2015. *Vademecum on European standardisation in support of Union legislation and policies, part I.* Brussels: SWD(2015) 205.

[67] EC 2015: 2-3

[68] EC 2015: 9

needs to include their particular requests in the future standard. It is only then that the "technical" phase of standard writing, in which private actors are engaged, can start.

What follows from these considerations is a two-step process in the organisation of the European intervention on the internal market for construction products (and in standardization, more generally). First, mandates are produced through *political* negotiations. Second, construction products are standardized through *technical* descriptions. Consequently, the European Commission, in charge of maintaining the stability of this system, has more to do than disentangling construction products from their conditions of production and use (as discussed above). Part of its task is also to identify what should be considered worthy of discussion during the writing of mandates, and be considered as a political issue potentially introducing trade barriers (safety is an example of such an issue). In other words, the European Commission's task is not only to disentangle construction products so that they become standardized European objects; it is also to separate the political phase from the technical one in the standard-setting process.

This would-be separation directly echoes the so-called *New Approach*, within which the European regulatory texts define general principles that are later operationalized in technical standards. Since the 1980s, the *New Approach* has set out the way chosen by the European institutions for standardization processes leading to CE marking. A large part of the *Vademecum* quoted above can be read as an additional commentary on the thirty-year old *New Approach*. Commented at length by scholars of the European Union, the *New Approach* proposed a redefinition of the mode of action of the European Commission, based on layered modes of public actions: European legal texts stating general requirements that would then be translated into technical standards crafted by private actors in standardization institutions. This mode of delegation was expected to ensure both the efficiency of the European regulatory activities and their democratic legitimacy. For theorists of the "regulatory state" that Europe would be, such as Giandomenico Majone, the *New Approach* is representative of a measured intervention on markets, which relies on private actors and member states, and on voluntary approaches more than constraining legal provisions. Majone argues that the *New Approach* is a key component in the re-definition of the sources of democratic intervention that Europe proposes. Based on "efficiency" rather than traditional democratic norms, it grounds the legitimacy of its action on the ability to

organise the delegation to member states and private actors, and coordinate rather than constrain[69].

The *New Approach* makes delegation a crucial task within the European standardization system. It is supposed to articulate the "political power" of the European legislator (the Council and the Parliament), the "regulatory power" of the European Commission in charge of operationalizing the whole system, and the "technical roles" of the standardization actors. These three terms, re-used in the 2015 *Vademecum*, characterize a system in which delegation is understood in a specific sense:

> *Therefore, in issuing a standardisation request, the Commission does not delegate political powers to the European Standardisation Organisations (ESOs) and their members, but recognises their specific technical roles in the process. It is the request — together with the Regulation and the relevant sectoral legislation — that describes and justifies the tasks that the public authorities assign to the ESOs.* ***This assignment is purely technical and is addressed to private organisations.*** *Consequently, specifications delivered by the ESOs in support of Union legislation can never be automatically regarded as complying with the initial request, as this is a political responsibility. As the requesting authority, the Commission will always have to assess compliance with its initial request, in cooperation with the ESOs (see also Section 7), before deciding to publish the references of a delivered standard in the Official Journal or referring to it "by other means in accordance with the conditions laid down in the corresponding Union harmonisation legislation" (Article 10(6) of the Regulation).*[70]

These considerations reveal the careful approach to the definition of what is "political" and

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[69] Majone, 1996. The *New Approach* seems to provide a more general framework to make sense of the two-step process identified with construction products. The construction sector holds a particular relationship with the *New Approach* though. It is regularly described as a "fake instance of the *New Approach*". Compared to the other sectors where CE marking is used (e.g. toys or pressure equipment), the building sector is indeed particular. While construction products receive CE marks, buildings are the entity being regulated in the European regulation. Thus, the "basic requirements" mentioned in the CPR all relate to the building itself, and mandates therefore need to define the expectations of the harmonized norms accordingly. Accordingly, the "blue guide" "on the implementation of EU product rules", i.e. the *New Approach*, mentions construction products among the elements that it does not attempt to cover (European Commission. 2016. *Commission Notice of 5/4/2016. The 'Blue Guide' on the implementation of EU product rules 2016*. Brussels: COM(2016) 1958: 15). This means that the delegation of policy objectives to private actors involved in technical standardization might well be even more complex than in other domains of the *New Approach*.

[70] EC 2015: 9, emphasis added

what is "technical". Insisting on the importance of this separation is a common trope of regulatory bodies concerned about their political legitimacy and the scientific quality of their expertise[71], nor, more generally, of modern political and scientific institutions[72]. But within the European standardization system, the distinction between what is "political" and what is "technical" is less about expertise and more about market organisation. Here, a realm of political negotiation is expected to be neatly distinguished from the domain of market organisation. Organising the market is considered a technical matter, outside of political considerations, and the legitimacy of the European Commission lies in its ability to distinguish between the two. This imagined institutional construct is an extension of the original project of European integration. The early days of European construction made the organisation of a common market the central objective of the newly founded European institutions, in the context of what European scholars have called the "economic constitution" of Europe[73]. Like West Germany in the post-war world, the European project was "ordoliberal" in that it grounded its legitimacy in the ability of public institutions to ensure that a competitive market was organised[74]. Standards are then a way of extending the ordoliberal project. They provide instruments whereby the discrepancy between national regulatory choices can be ironed out, and function within a system that separates policy-making from the technicalities of market organisation.

This ideal construct is not to be taken at face value. STS scholars have shown that maintaining the boundary meant to purify social activities such as expertise from "politics" is a daunting task that is constantly challenged[75]. While the official EU documentation sees standardization as "purely technical" (as in the quote above), scholars of the European standardization speak of a "*de facto* delegation of law-making powers through European standardization"[76]. In the next section, I comment on an example to show that determining what constitutes the "technical" phase and what should be excluded from it is contentious. This example will characterize the type of constraining intervention that the European Commission conducts when ensuring that construction products are disentangled, and that

[71] Jasanoff, 1987
[72] Latour, 1991
[73] Joerges, 2013
[74] Foucault, 2008; Davies, 2013
[75] Jasanoff, 1987; 1990
[76] Joerges, 2006: 5

the technicalities of market organisation are separated from policy considerations. We will see that these two objectives are two sides of the same coin, as isolating "essential characteristics" also means separating the decisions that can be left to standardizers from what should be discussed in arenas explicitly seen as political, primarily the Council. This means that the term "disentanglement" that I introduced above can be used to point to both the definition of standardized European objects able to circulate across Europe, and the delimitation of what is about the technicalities of market organisation and what is a matter of political negotiations.

The power to disentangle

A particular provision of the CPR can serve as an empirical lens to explore the nature and practice of the constraining intervention of the European Commission. This provision deals with "classes and thresholds"[77]. "Classes" are defined in the CPR as follows:

> *"class" means a range of levels, delimited by a minimum and a maximum value, of performance of a construction product.*[78]

The vast majority of harmonized norms use classes and thresholds, as they are the most convenient way of describing essential characteristics and levels of performance[79].

The CPR introduced an important change in the writing and modification of standards. Within the CPR, changes related to classes and thresholds can be done in two ways. The first route requires re-writing the mandate or, in other words, getting back to the "political" phase of the two-step process described above. All the actors involved agree on the complexity of such an operation[80]. The second way of modifying classes and thresholds uses the delegated act procedure, which was introduced in the 2006 Lisbon Treaty. The delegated act "grants extra power to the European Commission for the sake of speed and efficiency"[81]. This "extra power" is granted by the European Council and the European Parliament, which

[77] The provision about "classes and thresholds" was an evolution between the Construction Product Directive and the CPR. A CEN officer told me that this was "the main substantial difference between CPD and CPR".

[78] Article 2(7) of Regulation (EU) No 305/2011

[79] A CEN official in charge of CPR estimated during an interview that at least 80% of harmonized European norms use classes and thresholds.

[80] In 2016, it had never been undertaken

[81] European Institute of Public Administration. 2013. *Delegated and Implemented Acts. The new comitology*. EIPA essential guides: 12

then engage in "extra control in return"[82]. In practice, the delegated act has to be adopted by the two legislating bodies – thereby joining the efficiency argument with a democratic expectation. The adoption is done through a yes/no vote, thus leaving the technical wording of the delegated act to the Commission.

The introduction of the delegated act procedure in the CPR was not obvious to the negotiators from the member states when the regulation was discussed. While the conditions for the mandatory character of CE marking were debated at length, the additional conditions for the modification of classes and thresholds and the introduction of the delegated act procedure remained largely unnoticed[83]. Yet, and as we shall see below, it has important consequences for the nature of power exercised by the European Commission.

At this point, the first point of note is that the revision process of classes and thresholds defined by the CPR has crucial consequences – most notably the fact that the production of standards is extremely low, and that, according to all the actors involved, "the process is blocked"[84]. That which, before the CPR, was a routine procedure (recasting a standard at a CEN Technical Committee by lowering a thresholds or adding a class) became a complex process requiring either a revised mandate or a direct intervention of the European Commission[85].

An example regularly mentioned in interviews provides a telling illustration of the contentious situation of classes and thresholds, and of the extended power granted to the European Commission within the CPR. This example is that of a cellulose foam used for insulation, and meant to be squeezed between buildings' ceilings and roofs. Described as "in-situ formed loose fill cellulose (LFCI) thermal insulation", the product is standardized in a harmonized European norm, which was revised so that classes of performance were introduced. The revision process of the standard did not use a revised mandate. Instead, the European Commission proposed a draft delegated act in the spring of 2015, as a reaction to

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[82] *Ibid.*

[83] According to the negotiator of the EC for the CPR, the consequences of the delegated act approach was not even understood by the member states when it was introduced (Interview, DG Growth, January 2016). In his own words, "member states now hate delegated acts (…) but here we managed to introduce them without their noticing".

[84] Nearly all the actors interviewed made this same observation.

[85] Within the CPR, all classes and thresholds are "regulatory", meaning that member states need to use them in all regulatory texts dealing with the construction product concerned. This new constraint significantly increase the stakes associated with any modification of classes and thresholds in European norms.

the attempt of the CEN Technical Committee to introduce classes of performance. The draft delegated act states that the performance of the product depends on two essential characteristics, namely "settlement for horizontal applications, lofts and floors", and "short-term water absorption". The second criterion has been the most controversial. It relates to the level of absorption of humidity. As a member of a technical committee explained,

> *If there are leaks, the product can't absorb too much water otherwise it's a sponge. And the sponge will eventually circulate the water beneath the ceiling, or could even make the ceiling break. At any case, it creates pathologies, so you'd better avoid this.*[86]

To account for the fact that too high a level of water absorption would result in "pathologies", the CEN proposed two classes for evaluating the performance of this characteristic, and an upper limit for water absorption, after which the product could not be granted the CE mark. Yet the revision process of the standard led the Commission to request an additional class, so that products that would not meet the lowest threshold would still fall under the harmonized standard. This is explained in the following terms in the draft delegated act:

> *The second classification, concerning short-term water absorption, relates to the customary intended use circumstances for cellulose–based thermal insulation products. These are not expected to be used where subject to water penetration. However, and* ***to avoid the establishment of a hidden threshold level for this performance, the classification needs to remain open-ended.*** *This is to be achieved by adding one upper class to the classification included in the standard EN 15101-1 as adopted by CEN in September 2013.* (emphasis added)

In the draft delegated act, this resulted in a new class, said to be "open" as it did not define an upper limit for water absorption (see the table below, the third line in red was added by the European Commission).

[86] Interview, Isover, Paris, June 2016

Table 2 — Classes of short-term water absorption

Class	Requirements
WS1	≤ 1,0 kg/m^2
WS 2	≤ 2,0 kg/m^2
WS 3	> 2.0kg/m^2

The representative of a major French construction product company in the European federation of the sector described the episode as such:

> *So the Commission said "no, you need to open the class". And it's up to the consumers to know that they'd better not buy WS3. The Commission has this vision. It considers that one should not exclude certain products from the market. So if there are classes, we need to open them.*[87]

The former president of the EOTA (the European organisation in charge of the standardization of innovative construction products) mentioned the very same example during an interview. He had sent me the draft delegated act by email beforehand. "Is a sponge still an insulation material?" was a rhetorical question he raised several times during the interview, as a way of making his frustration "as a technician" explicit. His frustration is directly connected to a difference in drawing the line between technical and political issues. While he considered that setting a limit for the product not to become a sponge and playing its intended role as an insulation material was a technical issue, the draft delegated act considers that such a decision could not be left to technical committees to decide upon. In the eyes of the Commission, this choice is not "technical" but "political" – and it is so because setting an upper limit would exclude a whole category of products from the market. This is connected to the fact that for the Commission, all choices related to classes are political, and meant to be used in national regulations. Accordingly, they cannot be considered "technical" and cannot be left for standardization actors to decide upon.

This example illustrates a dual mode of intervention of the European Commission. First, the Commission seeks to ensure that, in European standards, construction products are disentangled from their economic ties, and become economic goods without qualities (to the point that an insulation product can be labelled as such even if it becomes a sponge with

[87] interview, EOTA, Champs/Marne, May 2016

high humidity). These disentanglement operations map onto those related to the maintenance of the boundaries separating political negotiations and the technical descriptions necessary for market organization. Thus, the delegated act for classes and thresholds appears as a legal innovation whereby the intervention of the European Commission is framed not only as a warden of boundaries between what should be left to standardizers and what should not, but also as a provider of technical content (under the supervision, at least nominally, of the Council and the Parliament). This evolution is well identified by standardizers. As one of them put it during an interview:

> *It's a change that is actually creating most of the problems, because most of the standards that are developing as supports of European laws are built on this concept of the New Approach. (…) The idea was that the Commission would deal with legal requirements, and the generic requirements, and technical work would be addressed to the standardization. The CPR deviates a little from this approach (…) . What we are seeing more and more is that the Commission wants to get into very technical and specific aspects that shouldn't be the Commission's role.*[88]

The shift of intervention by the Commission through delegated acts is highly controversial. For instance, Construction Product Europe, a federation of companies active in European circles, explicitly considers that "the obligation to revise the mandate or to ask for a delegated act when establishing classes is exaggerated"[89]. For this organisation acting as a representative of private companies, "many classes are only convenience classes" and thus should not be considered "regulatory"[90]. Accordingly, construction Product Europe explicitly lobbies the European Commission to limit the use of delegated acts. For some of the actors involved, it even gets to the point that some companies may decide to "kill harmonized norms", that is, deciding among private companies to stop the development of the harmonized standards. This threat, once unthinkable, would be, for a member of a French company involved in European standardization sees this once unthinkable threat as "one of the solutions currently being considered".

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[88] Phone interview, CEN, May 2016

[89] *Implementation of the Construction Product Regulation. Manufacturers' report.* Construction Product Europe: 20-21.

[90] *Ibid.*

Whether or not this threat will materialize matters less for our concern here than what it says of the contentious relationships between the European Commission and the actors of standardization, be they private companies or standardization organisations. It displays the constraining strength of the intervention of the European Commission as it aims to disentangle the essential characteristics from the particularities of products' production and use, and in doing so seeks to isolate what can be left to standardizers from what is considered "political". One can speak of the "power to disentangle" to characterize this intervention, which consists in defining objects by standards and maintaining institutional boundaries between the technicalities of market making and considerations seen as political.

Through the use of the delegated act, what could have been construed as a mere "delegation" within a system close enough to the *New Approach* has become a vehicle to exercise the power to disentangle. It results in a radical reformulation of the role of the EC – so much so that the president of EOTA describes the situation in these vivid terms:

> *Each time we go a little bit in a direction of connecting the product to the building… tac, tac, tac, broken! We wanted to add a class, tac, broken! A threshold, tac, broken! So it has been very long to manage to have EADs [European Assessment Documents] adopted by the Commission and cited at the Official Journal. Two years after the CPR came into force, no EAD was published. Well, we're slaves to the Commission. It's rather funny. It's written on the Commission website that EAD are written under the responsibility of standardization institutions and member states. And what I wrote on the EOTA website was that these institutions can only be in charge of what they are asked to do in a framework that has been imposed on them. (…) We're now in a real confrontation.*

The "confrontation" is also perceived from the side of the European Commission. Considering that no EADs had been produced and validated when we spoke in early 2016, the officer in charge of CPR at the DG Growth bluntly commented that people at EOTA "were in a hole and kept digging".

The fact that the use of delegated acts is so confrontational shows that the delegation at the heart of the *New Approach*, expected more generally to ground European standardization for the benefit of the single market, is highly ambivalent. The cellulose foam example is

useful to characterize the nature and practice of the European power to disentangle. When considering European standards, the European Commission identifies choices that could be matters for political negotiations (e.g. deciding that "a sponge" cannot ensure insulation). It can then either re-start the whole process by launching negotiations prior to the writing of a new mandate (a long and costly procedure) or, thanks to the delegated act, intervene to ensure the disentanglement of construction products from economic and political interests. This approach relies on a form of intervention of the EC that, more than a shift in the amount of latitude granted to member states or the European institutions, is a redefinition of the very nature of European public action. On the one hand, by re-establishing the boundary between what is "technical" (and should be done by standardization organisations and private actors) and what is "political" (and should be done through political negotiations at the stage of the negotiation of mandates), the EC follows the path opened by the *New Approach*, which seeks to limit the intervention of the European public administration. Yet on the other hand, the EC is granted the possibility to re-intervene in the process of standard setting, including in its technicalities, in order to ensure that construction products are properly disentangled and turned into economic goods without qualities.

Conclusion: what disentangling entails

In the *Birth of Biopolitics*, Michel Foucault discussed ordoliberalism as a mode of governmental action on markets that implies both that competition is the source of legitimacy and that "the market (…) can only appear if it is produced, and if it is produced by an active governmentality"[91]. Foucault explicitly connected ordoliberalism with the early days of European construction. The making of European objects standardized by virtue of the CE mark and expected to circulate within a harmonized market offers an illustration of the extension of the ordoliberal project of European integration. This extension is based on the dual disentanglement of European objects from their local ties, on the one hand, and of policy negotiations and the technicalities of market organisation, on the other. It requires an active intervention of the European Commission to maintain these disentanglements, and to conduct the supposedly "technical" operations at the heart of standard making.

[91] Foucault, 2008: 121

The legitimacy of the Commission's intervention is supposed to lie in the ability to regulate a harmonized internal market, and to play a central part in a political and economic ordering based on harmonization. Its main means of action is the separation of political considerations from the technicalities of market organisations. Political interests are legitimate, but are to be confined to certain stages, namely the negotiation and writing of European directives or regulations, or the mandates whereby the European Commission can ask CEN to produce harmonized European norms. The disentanglement thereby envisioned cannot be entirely described by the delegation logic at play within the *New Approach*, or by terms such as "governance" or "co-regulation" as heralded in the 2001 *White Paper on Governance*, since it redefines the very nature of what is supposed to be governed (economic goods without qualities, and economic and political agents expected to play their parts) and how to do so (by requiring new roles for the European institutions). Thus, the scope of "governance" or "co-regulation" is tightly constrained. What can be discussed are technicalities neatly separated from political choices, that is, any intervention that could be understood as erecting potential trade barriers.

The European Commission is then expected to ensure that boundaries are well drawn, and that standards do not constitute *de facto* trade barriers by being entangled with the private interests of certain companies, or to the national interests of member states. The intervention of the European Commission is based on its "power to disentangle". The power to disentangle requires heavy investments, including in the technical description of economic goods. It is a consistent proposition pertaining to both the source of legitimate and efficient European public action, and the role of markets as contributors to the collective welfare. Accordingly, considering CE marking as "a passport on the European market" makes the European project a matter of building an ideally harmonized market where construction products circulate freely and consumers are cognitively well equipped to make sense of complex declarations of performance, and one which is sustained by institutions able to neatly distinguish between political negotiations and market organization.

The power to disentangle implies that European objects are defined by severing their local ties. That the consequences can be problematic (to the point that the entire system seems on the verge of collapse) is better understood when considering the alternatives, as they are

proposed by both industries and standardizers[92] who frame the labelling of construction products (including CE marking) as a matter of quality. By signalling that certain products are adapted to particular uses, to the skills of the professionals manipulating it, and/or to local geographic conditions, quality marks frame market exchanges in such a way that products are indeed disentangled from certain ties, and re-entangled to others. As such, and as understood by some of the actors we encountered such as the former president of the EOTA or the head of the French construction product bureau, quality marks propose an approach to standardization that entangles selected market actors with the particularities of one product, and requires mechanisms of collective discussion representing various interests. Quality marks are ingredients of "concerned markets"[93], in which the technicalities of market organization and the interests and concerns of the actors involved are brought together.

The critics of the European Commission see standards as components of an "economy of qualities"[94]. They consider that the phase of political negotiations and the phase devoted to the technicalities of market organisation cannot be entirely disentangled. Standard setting is seen as a platform for negotiations among stakeholders (and one could argue that this is in the spirit of the *New Approach*, and of standardization in general[95]). They see the ideal to pursue not as a single market neatly separated from political negotiations, but the coexistence of various markets, differently attached to particular collective concerns or geographic places.

Disentanglement as imagined by the European Commission and re-entanglement based on the quality of products are not incompatible programs. One could indeed envision an organisation whereby CE marking were complemented by voluntary marks used by private actors wishing to make the particularities of their products visible to their consumers. From a strictly legal standpoint, as long as voluntary marks are disconnected from national regulations, and a matter of private arrangements only, they are not incompatible with CE marking. Yet the actors involved, in private companies and standardization organisations, identify an evolution of the European Commission on this point, toward a greater reluctance

[92] During interviews, many of them contrasted this perspective with that of the EC.
[93] Geiger et al., 2014
[94] Callon et al., 2002
[95] Borraz, 2007; Cochoy, 2000

in accepting that voluntary marks exist alongside CE marking. This reluctant position sees a slippery slope towards protectionism, in cases where voluntary marks would be required in public procurements, or systematically demanded by insurance companies. In other words, if voluntary marks are tacit requirements for entering a national market, then they might well become trade barriers to eliminate in the Commission's eyes – an argument that the officials in charge of the CPR at the EC made explicit to me[96]. Faced with the looming threat of potential trade barriers, it seems that the EC chooses to assert its power to disentangle even more. Whether or not it does so in a conscious way does not matter here. More interesting is the overall project, namely a European space whereby an ideal market would function as an economy without qualities, for political sakes neatly separated from the organisation of markets.

The power to disentangle denies the ability to qualify European objects by any qualities other than that of being "European". This makes the case of construction products both the most explicit illustration of disentanglement, and perhaps the most difficult to realize in practice – as the difficulties in producing the required harmonized norms show. But the pervasive oppositions about construction products also invite us to reflect on the (non)-democratic consequences of the power to disentangle. By isolating the sphere of political negotiations, and granting considerable possibilities of intervention to the European Commission, the organisation that emerges from the CPR makes the harmonization of the internal market a Commission prerogative, expected to be outside the realm of democratic activities.

In the next chapter, we will encounter other illustrations of European initiatives based on granting European objects the ability to circulate on the European market. But these other illustrations will show that European objects can include complex qualities. Standardizing European objects are not necessarily only about "essential characteristics". In commenting on these examples, I will pursue the reflection about the democratic consequences of the European ordoliberal project. We will see that making standardized market objects has offered a path for extending the perimeter of European policy interventions, and that this path raises pressing political issues.

[96] Interviews, Brussels, January 2016. Symmetrically, representatives of professional organisations and national public administrations would repeatedly state the sole objective of the Commission was to eliminate trade barriers.

Chapter 3. Extending European power

European objects with qualities

The previous chapter analysed a way of making European objects, based on disentanglement. The power to disentangle, I argued, consists in severing the ties that connect an object (e.g. a construction product) to local particularities so that it can circulate across Europe, and thereby become "European". The other way in which the power to disentangle is exercised consists in separating political negotiations and the technicalities of market organisation. As the difficulties encountered by the implementation of the Construction Product Regulation show, disentanglement is an objective, at best, imperfectly achieved. This objective is based on the idea that European objects can be extracted from local contexts, and that the market in which they are expected to circulate can be isolated from political negotiations. The case of construction products has shown that this objective relies on constraining interventions conducted by the European Commission, and that this "power to disentangle" is a threat to local particularities and to attempt at restricting the access to the European market to quality products. The critics of the European Commission's approach to construction products know this all too well, as they oppose the ways in which CE marking is imposed for ironing out local particularities and their concerns about the quality and safety of products. Thus, the European dream of a harmonized market of standardized products, intended to ensure quality products, might well be seen as a threatening nightmare of disappearing local practices and left aside safety concerns, all subsumed under the goal of eliminating trade barriers.

Are there European objects that are characterized by specific qualities, either local or tied to explicit safety considerations? If so, what European interventions govern them, for the sake of whom, and for what outcome? The examples that I discuss in this chapter are all about European interventions that aim to tackle problems that go beyond market integration, such as protecting the specificities of local food products, acting on the health risks of tobacco, or

controlling hazardous financial instruments or industrial waste. Thus, we will encounter European objects that are more complex than CE-marked construction products standardized according to their "essential characteristics". By virtue of dedicated European interventions, they are described as "local" or "hazardous". Thus, the foods products, cigarettes, financial instruments and hazardous waste that this chapter analyses could be construed as contrasts to the CE-marked construction products analysed in the previous chapter. They are indeed tied to policy goals that go beyond the elimination of trade barriers, and relate to rural development, human health or financial stability.

But as CE-marked products, the objects we will encounter in this chapter are above all European *market* objects, and we will see that the legal justifications and ultimate objectives of the interventions that target them are about market harmonization. By virtue of being market entities, the objects under consideration here provide additional possibilities of European intervention, over and above the mere standardization expected to preclude trade barriers. These European objects show that the objective of disentanglement has proven to be more malleable than the case of construction products suggests. European objects characterized by specific qualities related to their geographic origin or to their risks are in fact disentangled, and turning their "local" or "risky" characteristics into components of market objects circulating across Europe has offered avenues for the European institutions to extend the scope of their interventions.

I start by discussing food products, particularly as their geographical origin is protected by European regulation. I show that instead of being exceptions to the harmonization of the European market, protected food products are an extension of it, and a way for European interventions to reach new policy domains. The second section of this chapter focuses on other kinds of qualities, related to risks to human health. It discusses the European regulation of tobacco products, and shows that here again, the harmonization of European market objects has been a way to extend the perimeter of European intervention: standardizing tobacco products has been a way to pursue health policy goals. This type of European intervention on and through market objects is more general. The third section comments on other examples, such as hazardous waste and financial products, where they can be identified. This is the main lesson of this chapter: if the dream of disentanglement

remains alluring, it is also because it has provided resources for extending the perimeter of European interventions beyond the mere elimination of trade barriers.

Making the local European

Making locality a European feature

Food products are telling examples of the tension between harmonization and local particularities, as local ingredients or production techniques can be regarded as inherent to the nature of certain objects. The on-going debates about how to preserve local particularities within the European Single Market can be understood as a pervasive opposition to harmonization, by actors who are eager to preserve the quality of their local products and want the local characteristics protected. This means that they refuse that other producers claim to have products equivalent to theirs – which, through the eyes of the Commission, can easily be seen as a potential trade barrier.

Yet, as scholars working on the qualification of the origin of food products have shown, the European regulation has been active in including geographical origin as part of what describes food products. One could say, in the language of the construction product regulation, that geographical origins can become part of products' "essential characteristics". This move originated in the 1980s, in the wake of the *New Approach* and the recognition that legislating on products' composition was not feasible at European level[97]. A turning point was the 1992 regulation "on the protection of geographical indications and designations of origin for agricultural products and foodstuffs"[98], which introduced two instruments called "designations of origin" and "geographical indications". Protected designations of origin (PDOs) are used when a "close and objective link" between the product and its geographical origin can be established – meaning that its quality must be at least partly connected to the local particularities of its area of production. Protected geographical indications (PGIs) offer the possibility to qualify food products according to their local area of production, which can be based on "reputation" and is not necessarily

[97] Allaire et Sylvander, 1997; Sylvander et al., 2007

[98] Regulation (EEC) No. 2081/92 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs; in addition, Regulation (EEC) No. 2082/92 protects traditional recipes.

"objective". In other words, PGIs make geographical origins components of the qualification of products, irrespective of their consequences for their other qualities (such as taste, composition, etc.). These initiatives have fuelled many debates, as some have criticized the bureaucratic organisation they rely on, and questioned the relevance of the information provided to the consumer[99]. Yet for all the discussions about them, PDOs and PGIs have been widely used across Europe, above all by France and Italy, and have served to protect such products as Bayonne ham or Beaufort cheese.

The range of products covered by the geographic origin regulation is wide, from ham to cheese, and honey to fruits. Wines are covered by yet another legal text, which draws a distinction between "quality wines produced in specific regions" and "table wines". The two can be granted a geographical indication, which is registered in national systems. What the labels need to comprise is determined by the regulation[100], but in all cases is tied to the geographical origin. This makes indications of geographic origins significantly different from trademarks, which can circulate beyond any geographic location. Trademarks can be bought, sold or inherited. They can refer to a name that has a geographical meaning while being used by a company with no links to the initial location. When trademarks are infringed, the companies owning them take legal action. By contrast, European PDOs and PGIs prevent competitors from putting similar products with the geographical name on the market (nobody but Bayonne producers can sell Bayonne ham). PDOs and PGIs are tied to public bodies in charge of implementing certification systems and protecting them in court if needed[101].

Extending harmonization by different means

The movement to relocate the qualification of goods provides a stark contrast to the case of construction products described in the previous chapter. Instead of products being disentangled from their local conditions of production, they are re-entangled with their places of origin. Some scholars have spoken of "gastronationalism" to denote the

[99] Profeta et al., 2010

[100] Regulation 753/2002

[101] See (Kireeva, 2009), about court action in cases of conflict between geographical indications and trademarks.

entanglement of processes of food production, distribution and consumption with nation-building, and challenge the reading of globalization as an inescapable unifying force[102]. Others analyse it as an "alternative geography of food", based on *terroir* rather than productivity criteria, and which has roots in cultural and industrial models of the southern member states[103]. The fact that France and Italy, two countries where the food sector can easily be described in those terms, are the Member States using the most PDOs and PGIs seems to confirm this interpretation. These considerations could lead us to think of indications of origin for food products as exceptions to harmonization. Local ties are maintained instead of being ironed out under a general "passport for circulation on the European market", like the CE mark. I want to argue, however, that rather than exceptions to harmonization, they are instead an extension of it, which turns local objects into European ones by integrating their local characteristics. There are two levels to this argument, one related to the manufacture of a European space of competition, the other to the transformation of the food products themselves as they become "local" thanks to the European protection of geographical origin.

First, the localization of food products thanks to PDOs and PGIs is a way to manufacture a European space of competition. Scholars of the European regulation of food products have shown that "the emergence of EU-wide regulations was in large part to avoid trade problems among EU members that would result from national systems of protection", as "individual EU member states have markedly different views on the question of whether and which GIs to protect."[104] In other words, instead of facing a multiplication of national approaches to validate what counts as a "local" food product, the European perspective preferred to turn locality into a European feature.

This means that the local origin becomes part of what differentiates a given product from those with which it is in competition. What this entails and how it is consistent with a market logic is visible in cases where the protection of origin is legally challenged. Consider for instance the legal challenges that Greece faced as it tried to protect feta cheese. In 2014, Greece wanted to register "feta" as a PDO[105]. This request was considered in several court

[102] deSoucey, 2010
[103] Parrott et al., 2002
[104] Josling, 2006: 343
[105] Blakeney, 2014

cases at the European Court of Justice[106]. The crucial question concerned the extent to which the name "feta" was "generic". Was the name feta a generic one, which could be used everywhere in Europe, thus constituting a single space of competition and allowing consumers to buy Greek, German or Danish feta cheese? Or was the name feta only the designation of a particular cheese produced in Greece, and which could compete within a market space alongside of various other "cheeses soaked in brine", be they feta or not? The Court considered several arguments, including the fact that "it was common ground that white cheeses soaked in brine have been produced for a long time, not only in Greece but in various countries in the Balkans and the southeast of the Mediterranean basin, but that in those countries those cheeses are known by names other than 'FETA'", and that feta cheese "was commonly marketed with labels referring to Greek cultural traditions and civilization"[107].

These arguments grounded the ECJ's decision. Greece was eventually authorized to protect feta cheese, and producers outside Greece were denied the right to use the name. Instead of disentangling feta cheese from Greece and making it circulate across a European market where various feta cheeses would compete against one another, the European law made feta an additional qualification for a Greek cheese expected to compete against other (non feta) cheeses. Had it considered feta to be a generic name, the European law would have imagined the European consumer as an economic agent able to choose among various feta cheeses. Instead, it enabled the consumer to choose a particular Greek cheese, feta, among many other cheeses soaked in brine. These consumer figures are of course partly fictitious, for they are based on isolated situations of choice involving well-informed consumers attentive to products' labels. These imagined figures are those for the sake of whom the European regulatory initiatives are undertaken. And in the case of the protection of feta cheese, as in that of the construction products described in the previous chapter, harmonization is the objective, and disentanglement the means. What the example of the protection of origin introduces, however, is the importance of the definition of what circulates, and of the structure of the space of competition.

[106] Cases C-289/96, C-293/96 and C-299/96.
[107] Blakeney, 2014: 92-95

In that regard, the indications of origin for food products are less exceptions to the harmonization than an extension of it. Whereas the CE mark is an attempt to severe ties to local market arrangements (e.g. as national marks were used as conditions for public procurement, or for getting insurance policies), it is only when food products become local, in the sense that the local character becomes an integral and visible component of them, that they can compete across the European market. Thus, the European initiatives in harmonizing geographical indications introduce competition in previously local markets – thus widening the scope of market exchanges – and simultaneously create incentives for producers to use market differentiation through the mobilization of local qualities.

The second important dimension of the European interventions on protected food products is that they have material consequences for products and producers. The introduction of PDOs and PGIs mean that lines must be drawn: geographic lines delineating spatial zones, and immaterial ones distinguishing who is allowed to produce. Thus, as the French government's application for PGI was granted in 1999 for "*Canard à foie gras du Sud-Ouest*", small producers feared that any producers in the south-west of France would be able to obtain the label, be they artisanal or industrial[108]. Drawing the boundaries that define the zone where the products will be protected and who can produce them also has material consequences for the products themselves. A telling illustration is the case of halloumi cheese, which has been debated in Cyprus in the context of a potential PGI application. This case has been analysed by anthropologist Gisela Welz[109]. An application for PDO was submitted in 2009, but the process was far from consensual. Welz has analysed the lengthy discussions about halloumi, a popular cheese in Cyprus and a seemingly perfect candidate for European protection of geographical origin. Debate raged between industrial dairy companies and other producers of cheese about how to produce the cheese. While the former insisted that cow milk should comprise at least half of the milk used in halloumi cheese, the latter argued that sheep and goats' milk should remain the main ingredient of the cheese. Dairy cows had been introduced to Cyprus in the 1960s, and since then had been used by private agro-industrial companies to make halloumi cheese. These companies saw a clear interest in using the European designation of origin to increase the prices of their products sold abroad. Producers of goat and sheep milk staged demonstrations in Cyprus as

[108] deSoucey, 2016; Téchoueyres, 2007
[109] Welz, 2013

they feared a protected halloumi would imply mandatory changes in the composition of the cheese, mirroring the interests of the biggest corporations. This debate mapped onto yet another one, about the ethnic identity of the country. While all inhabitants of Cyprus have traditionally produced halloumi, the application procedure for European PDO made it a Greek Cypriot cheese, and the Greek Cypriot media construed the European label as a protection against Turkish Cypriot producers and dairy companies from Bulgaria and Turkey. In 2012, the first attempt to get a PDO for halloumi failed, as the Cheese Makers Association, which is dominated by large dairy companies, pulled out its support over the controversy about milk. Three years later, however, yet another application was mentioned in the press, in the context of pervasive tensions between the two parts of the island[110]. As halloumi is produced in both the Greek Republic of Cyprus, part of the European Union, and the unrecognized Turkish Republic of Northern Cyprus, reserving the regulatory protection of the cheese to the southern producers caused yet another source of tension between the divided parts of the island.

One could indeed speak of "gastronationalism" in the case of the Cypriot halloumi, but the term ought to point to much more complex dynamics than a reaction by nation-states to counter the unifying forces of European integration. Rather, the transformation of products into labelled "local" ones is caught in oppositions about who benefits on what markets, how the local should be defined, and how it articulates food qualification and national identities. The opposition here is not between the European harmonized market and pockets of protection of local particularities, but between different constructions of the local. On the one hand, the European indications of origin frame the local as an additional quality through which standardized European objects can be described before circulation on the European market. The local is necessarily circumscribed with precision, meaning that some actors and objects are excluded. This local is not at all antithetical to the ordoliberal project of European integration. It is a disentangled local, made fit for circulation throughout Europe. It exists because regulatory rules are defined at the European level. It functions within an institutional arrangement whereby policy negotiations about which food product should be

[110] "Cyprus great halloumi debate: the source of the country's latest North-South divide is… cheese", *The Independent*, May 13, 2015, https://www.independent.co.uk/life-style/food-and-drink/news/cypruss-great-halloumi-debate-the-source-of-the-countrys-latest-north-south-divide-is-cheese-10247910.html (last accessed August 9, 2018).

protected are followed by the technicalities of market organisation, related for instance to the exact definition of production processes.

The opposition to the European protection of halloumi cheese, on the other hand, suggests a different problematization of the local, in which local products are not precisely characterized but are the outcome of a wide range of informal practices that are geographically situated and not meant to circulate. For artisanal producers of halloumi, the local is not confined to a well-defined area but extends beyond geopolitical boundaries. It stems from an informal space of practices extending across the boundary that divides Cyprus, and possibly beyond this sole island to the Mediterranean area where goat and sheep milk is used. It is coextensive with the day-to-day techniques of producers, and could not be defined independently of the variety of these techniques.

This story is also useful in our reflection about European objects. Turning cheese produced in Cyprus into a European object is not just about introducing a legal fiction that prevents potential producers from manufacturing it outside of the island. It also has consequences for the physical nature of the cheese, and for the social identities of the actors involved, whether large companies hoping to extend their profits thanks to future European consumers, or small producers wishing to defend a wide range of production practices. This explains the virulent opposition, but also the powerful nature of European objects. For the European Commission, it has provided another channel for advancing diverse policy objectives, as I will now discuss.

Local qualities and the extension of the ordoliberal project

Turning local products into European objects is an economic operation, meant to recognize the particular market position of producers, and to offer relevant information to a European citizen imagined as a consumer eager to learn about the products she or he buys. Through the example of construction products, we saw that the CE mark was meant to be the only passport for circulation on the European market, construed as a unified space of competition. The protection of origin shows that ordering the European market also means defining what the appropriate space of competition is. For instance, the protection of feta cheese implies that it will compete against other cheeses soaked in brine, and that there will

be no European market of feta cheeses where Greek, Danish and German feta could compete. Rather than pockets of protection against the unifying forces of European harmonization, the protection of origin is better described as an extension of the ordoliberal project of European integration.

This extension occurs in a domain, agriculture, that has been perhaps the most antithetical to the ordoliberal project of market extension within the European project in the first place. The European Common Agricultural Policy (CAP) was originally organised as a subsidy system meant to support minimal price levels. Scholars of the European economic constitution see the CAP as the opposite of the market-based project at the heart of the harmonization project, an "original sin" when seen from the ordoliberal perspective[111].

The European initiatives toward food quality and local characteristics can be situated within the more general evolution of the agricultural policy. When the European agricultural policy was reformed in 1992, it shifted its priorities from price support to rural development, "from increasing food quantity towards increasing food quality"[112]. The 1992 regulation introducing the protection of origin made rural development an explicit objective of the protection of local food production:

> *"the promotion of products having certain characteristics could be of considerable benefit to the rural economy, in particular to less-favoured or remote areas, by improving the incomes of farmers and by retaining the rural population in these areas".*[113]

The concern for rural development grew in the 1990s, and was made explicit in the 1996 Cork Declaration, in which European actors made rural development a priority of European territorial policy[114]. This new priority transformed the ways in which agriculture in general, and farmers in particular, were expected to be governed. In addition to distributing subsidies, the European agriculture policy would also turn farmers into economic agents expected to engage in more profitable activities (including, in some cases, outside of

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[111] Joerges, 2007: 16

[112] Becker and Staus, 2009: 2

[113] Regulation (EEC) n.2081/92, recital 2

[114] The declaration is available at: http://ec.europa.eu/agriculture/rur/leader2/dossier_p/fr/dossier/cork.pdf, and see the so-called "Cork 2.0 declaration" in 2016 ("A better life in rural areas"), (https://ec.europa.eu/agriculture/sites/agriculture/files/events/2016/rural-development/cork-declaration-2-0_en.pdf, last accessed August 9, 2018.

agriculture itself)[115]. Protecting geographic origins could then be a component of rural development policy, in that it created new market domains, possibly profitable ones, that farmers could occupy.

The actual contribution of the protection of origin policy to rural development is still uncertain. Projects have been funded by the European Commission in order to explore the conditions for tying rural development to the qualification of local characteristics[116]. Studies have found "mixed results", particularly in situations of conflict[117], of which the example of halloumi cheese provides a good illustration. These studies have described a wide variety of strategies adopted by the actors involved (be they large companies, small producers, local public bodies, etc.), each having impacts on rural development[118].

Whether they have been achieved or not, the objective of rural development and the expected contribution of the protection of origin are based on a conception of local producers as economic agents able to extract monetary value from the local characteristics of their products, thereby contributing to the economic development of rural regions. This imagined producer is activated by European policy, instead of being subsidized by it (as in the context of the original Common Agricultural Policy). As such, acting on local food products to make them European can be seen as integrating agricultural policy concerns into market ones. This helps to describe in more precise terms the harmonization project introduced in the previous chapter on construction products. Thus, European harmonization is not necessarily opposed to the singularization of products, as long as they are made European objects characterized by their geographical origins, or, in other words, as long as the local is disentangled. Moreover, the singularization of products is a vehicle for the extension of policy action in new domains of intervention (such as food quality in the examples discussed in this section). Food products illustrate a particular dynamic, whereby European objects are made not only for the sake of the European markets but also for that of policy objectives wider than the sole market integration, such as rural development policy. Examples related to the integration of qualities related to risk in the making of European objects will provide other illustrations of this dynamic.

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[115] See Rumford, 2008: 79

[116] Libery and Kneafsey, 1998

[117] Tregear et al., 2007

[118] Pacciani et al., 2001

Turning risk issues into problems of market harmonization

European tobacco

The case of protected food products is that of objects becoming European thanks to additional characteristics related to their local areas of production. But one can also describe products by negative characteristics, such as the health risks they pose. The health risks of consumer products can be regulated in various ways: some of them imply withdrawing products from the market; others are based on consumer information; yet others introduce standards that producers need to follow. The case of construction products discussed in the previous chapters is also an illustration of how the European regulation deals with risks. Here, the condition for construction products to circulate on the European market is that the integrity of the building in which they are used is ensured. How this translates to the technical specifications of the products is then included in the mandate that the Council addresses to the European Committee for Standardization. We have seen that this configuration causes issues related to whether decisions deemed necessary for safety are indeed technical or should be reversed back to the mandate negotiation phase. It is also illustrative of the somewhat conflicting position of the European institutions regarding health and safety issues. The European Union has fewer tools than nation states to act on health issues. Healthcare, for instance, is a national prerogative. But in so far as risk concerns are market externalities, they cannot be entirely set aside, and even less so since the 1986 Amsterdam Treaty made "a high level of health, safety and environmental protection" an objective of European integration.

This section focuses on tobacco, a contentious product in Europe, and a good illustration, if not the best, of the ability of the European institutions to extend the scope of their interventions through the harmonization of market objects. The tobacco story is that of on-going opposition between the European Commission and some member states and companies, over attempted regulations that introduce labelling about cigarettes' health risks, along with other measures meant to curb tobacco consumption. We will see that this opposition relates as much to the evaluation of health risks and the pursuit of deeply entrenched economic interests, as to the scope and modalities of the European power to act

in constraining ways. We saw in the previous section that local food products become European objects when the local is turned into a European quality, and the products are transformed accordingly. We will see that turning risky cigarettes into European objects have required that health issues were tightly articulated with problems of market harmonization.

A first step to examine this is to consider that the European regulation of tobacco products has evolved toward greater standardization. It started with the 1989 directive on cigarette labelling, later amended in the 2001 and 2014 tobacco product directives. These pieces of legislation have standardized the tests that manufacturers have to implement to ensure that nicotine levels are acceptable. The tobacco directives have also targeted consumers by warning them against tobacco's health risks. Thus, each of these texts specifies the types of label that tobacco products should bear. They comprise detailed specifications related to the surface share of health warnings on packaging. Standardization, here, appears as a way of ensuring that the consumer is appropriately informed about the health risks of tobacco. In parallel, it makes market differentiation more complicated, by setting the levels of harmful substances allowed, and banning certain specifications. For example, the tar yield of cigarettes was progressively reduced in successive EU directives[119]. The 2001 tobacco directive prohibited descriptors such as "light" or "mild", on the grounds that these epithets may "mislead the consumer into the belief that such products are less harmful"[120]. The 2014 tobacco directive then banned "characteristic flavours", as well as 10-cigarette packs. The European texts have used harmonization as a way of creating a European informed consumer, while acting on the products (that is, both the cigarettes themselves, and their packaging) to prevent companies from using marketing strategies to target particular social groups (e.g. the youth or non-smokers, expected to be more receptive to flavoured cigarettes).

These initiatives have been highly controversial. Tobacco directives are regularly cited as "the most lobbied" legal texts in European regulatory history[121]. Negotiations have been

[119] E.g. in directive 90/239/EEC, tar yield had to be limited to 12mg per cigarette by 31 December 1997.

[120] Directive 2001/37/EC of the European Parliament and of the Council of 5 June 2001 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco products; Recital 27.

[121] Corlett N. "ALDE priorities for the week of 23 Sept 2013". www.vieuws.eu/previeuws/parliament-agenda-alde-priorities-for-the-week-of-23-sept-2013/; quoted in Bertollini et al., 2016: 153

harsh, and the provisions of each of these directives hotly debated. During the review process of the 2014 Directive, Health Commissioner John Dalli was forced to resign because of claims of industry interference[122]. The negotiations themselves significantly weakened the text. For instance, the initial version of the 2014 directive stated that warning labels were to occupy 75% of the packets' front, included a ban on all "characteristic flavours", and banned slim cigarettes. The final directive eventually stated that 65% of the packaging's surface would be used for a health warning, introduced a 4-year derogation for menthol cigarettes, and excluded the ban on slim cigarettes[123].

These controversies are yet another occurrence of the all too familiar clash between regulatory attempts and powerful interest groups, all eager to use their influence to diminish the legal control over their products, however harmful they might be. Tobacco is a prime example of regulatory battles during which powerful companies have proven ready to use scientific arguments in dubious ways[124]. But these controversies also point to another element, specific to the European context, namely the ways in which a political organisation meant to organise a market can exercise power on health issues.

What European intervention on health?

This harmonization story only partly resembles the case of construction products. Here, the rationale seems to be less about trade barriers than about health. The European directives explicitly refer to health policy considerations. The 1989 directive's legal basis "includes the European Council meeting of June 1985, which launched a European action program against cancer and the Resolution of July 1986 on a program of action of the European Communities against cancer"[125]. The action against tobacco soon became a central component of the European programme against cancer[126]. Accordingly, the successive tobacco directives mention both health considerations and the integration of the European market in their objectives. For instance, Recital 4 of the 2014 tobacco directive states that:

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[122] Costa et al., 2014
[123] Bertollini et al., 2016
[124] Oreskes and Conwey, 2011; Proctor, 2012
[125] Weiler, 2003: 2463
[126] Adamini et al., 2011: 68

a high level of protection in terms of health, safety, environmental protection and consumer protection should be taken as a basis, regard being had, in particular, to any new developments based on scientific facts; in view of the particularly harmful effects of tobacco, health protection should be given priority in this context.

But the two previous recitals of the 2014 directive are about market integration. The 2001 directive was also explicit about market concerns. Its Recital 2 stated that:

There are still substantial differences between the Member States' laws, regulations and administrative provisions on the manufacture, presentation, and sale of tobacco products which impede the functioning of the internal market.

The directive then considered that "those barriers should be eliminated" (Recital 3).

Are tobacco products problematic because of the health problems they raise or because of the issues they pose as poorly harmonized market objects? This question is precisely what has made these European interventions contentious. After the 1989 directive was adopted, the United Kingdom "challenged the competence of the Council (meeting as the Council of health ministers) to adopt legislation pursuing the *objective* of health"[127]. Yet, the Council had used the majority vote on the basis of Article 100a, which regulated the internal market, to adopt the cigarette labelling directive. In other words, the United Kingdom challenged the legal basis of the directive on the grounds of what it saw as a contradiction: how could the European regulation target health objectives (for which it had little competence and in all cases required a unanimity vote at the Council to pass) using the tools of market integration (which made it much more powerful, no less so because only a majority vote at the Council was required)?

The United Kingdom lost its case. European scholar Joseph Weiler argues that this episode is the perfect illustration of what he identifies as "the transformation of Europe" throughout the 1970s and 1980s. Weiler characterizes this transformation as "the erosion of the principle of enumeration", whereby the competencies granted to the European bodies are enumerated in an exhaustive way. In a widely cited article, Weiler states that:

"it is not simply that the jurisdictional limits of the Community expanded in their content more sharply in the 1970's than they did as a result of, for example, the Single

[127] Weiler, 2003: 2462

European Act. The fundamental systemic mutation of the 1970s (…) was that any sort of constitutional limitation of this expansion seemed to have evaporated.[128]

The tobacco directives provide an illustration of the process whereby the "constitutional limitation of this expansion (…) has evaporated". In these cases, and as the critical position of the United Kingdom shows, market regulation is used to conduct health policy. This is done through the making of European objects to which additional characteristics are added, in this case related to tar yields, additives, packaging, and labels. These additional characteristics turn cigarettes into European market objects. These characteristics are related to the risks of tobacco but their legal justification is about market harmonization. As such, they integrate the health objectives of the European regulation into the organisation of the European market. In other words, European market objects are standardized for the sake of a health policy objective, but according to the methods of market harmonization, and legally justified by market harmonization. Tobacco products are not exceptions to a harmonization project based on disentangled market objects, but rather illustrate how this project provides resources for extending European interventions to new domains. When Weiler commented on the 1989 Tobacco directive, he saw it as an important milestone in the extension of the European power to act, as the legal ground of market integration could be used to pursue health policy. The European Court of Justice played a fundamental role in this process, as it upheld the 1989 Directive. This episode can be seen as a "constitutional moment"[129], in Sheila Jasanoff's terms, during which the nature of the European power to act was questioned, and eventually extended.

Constitutional moments

The constitutional strength of the European regulation of cigarettes (and tobacco products more generally) is not limited to the 1989 cigarette labelling directive. Tobacco products have been problematized as market entities in need of harmonization since then, and the legal basis of the successive European texts has remained the harmonization of the internal

[128] Weiler, 2003: 2446
[129] Jasanoff, 2011

market[130]. The story of the contestation of the successive European texts then reads like that of successive "constitutional moments", whereby the European Court of Justice draws and redraws the perimeter of acceptable operations of object-making, legally grounded in market integration but with explicit health motives.

Consider for instance the 1998 directive that attempted to ban all forms of tobacco advertising[131]. Legal challenges were organised by Germany, supported by the United Kingdom and tobacco companies, on the grounds that the directive based its intervention on the regulation of the internal market, while introducing measures related to health policy – that is, the exact same legal argument that the United Kingdom had used to challenge the 1989 Tobacco directive. The Court of Justice eventually annulled the directive, in a case known as Tobacco Advertising that became famous among legal and European scholars[132]. As a scholar of subsidiarity in Europe puts it:

> *In Tobacco Advertising the Court of Justice struck down, for the first time in the history of the European Union, a European legislative act on the grounds that the EU was acting outside its jurisdictional boundaries.*[133]

Tobacco Advertising eventually resulted in a directive that was much less ambitious than the original one. Rather than banning all advertisements for tobacco, it only banned cross-border advertisement (via print media, radio and the Internet). While Weiler saw the 1989 tobacco directive as a clear sign of unlimited extension of European power, Tobacco Advertising was interpreted as a halt to the extension of European power. It has been described as such by legal scholars and theorists of European integration, who interpret the Court's decision in those terms:

> *"the Community is commended for empowering private operators to trade on a level playing field but condemned for encroaching on their economic freedoms."*[134]

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[130] The numbering of the corresponding article in the Treaty evolved with the successive treaties. Article 100s later became Article 95 TEC, and eventually Article 114 of the Treaty of the Functioning of the European Union (TFEU).

[131] Directive 98/43 relating to the advertising and sponsorship of tobacco products

[132] Case C-376/98 Germany v Parliament and Council (Tobacco Advertising)

[133] Kumm, 2006: 503-504

[134] Tridimas and Tridimas, 2002: 180

Tobacco Advertising, however, represented less a halt in a process of expansion of European power than an episode in the gradual definition of the appropriate scope of European intervention. The subsequent tobacco directives were similarly challenged, by the same actors, and using the same legal argument, that is, that an impropriate legal basis was used to pursue a health objective[135]. But in the latter cases, the ECJ constantly upheld the European text[136].

Consider for instance the last of these court cases, when Poland challenged the 2014 directive and particularly the ban of menthol cigarettes. Poland argued that menthol cigarettes were different from other flavoured tobacco products, because of tradition and particular taste qualities. Thus, Poland considered that the European law should make a better case for arguing that the legal basis of the 2014 directive was the power granted to the European Commission to harmonize the internal market. To do so, it should have demonstrated significant harmonization problems specifically related to menthol cigarettes. The Court considered that menthol cigarettes were not significantly different from other tobacco products, since "the fact remains that all flavourings, including menthol, mask or reduce tobacco smoke's harshness and contribute to promoting and sustaining tobacco use"[137]. The Court then concludes that the directive's argument about the free movement of goods was consistent, since "divergences exist between the national rules concerning tobacco products containing a characterising flavour, (…) which are such as to present obstacles to the free movement of those products"[138]. The ECJ reasoned that as the directive contributed to the Single Market, the EU could not be prevented from basing its initiative on Article 114 TFEU (related to the internal market) on the grounds that public health was a decisive objective.

Here, the extension of the scope of European interventions to new domains is based on an argumentation related to the market. This does not mean that scientific arguments play no role. Scientific arguments are, in a sense, everywhere, as proponents of the regulation of tobacco regularly use them to argue for stricter regulatory choices. For instance, critics have

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[135] The directives used the articles of the Treaties related to the internal market (article 95 EC, later 114 TFEU).

[136] Judgment of the Court in Case C-491/01 The Queen v Secretary of State for Health, ex parte: British American Tobacco (Investments) Ltd and Imperial Tobacco Ltd [2002] ECR I-11453, para. 62. Case C-210/03 Swedish Match, supra note 68, para. 31.

[137] Judgement C-358/14; para. 54

[138] Judgement C-358/14; para. 56

challenged the test used to measure levels of tobacco inhalation, as these tests are crafted at the International Standardization Organisation (ISO) by private players who have direct interests in their outcomes[139]. In turn, and through a process that has been described by historians of science interested in the manufacture of ignorance, opponents of regulatory initiatives have used scientific arguments to postpone regulatory action[140]. The ruling of the ECJ that upheld the 2001 and 2014 tobacco directives all mentioned scientific knowledge backing the causal link between tobacco and negative health effects, and the connection between health warnings and consumer behaviours. Yet what primarily mattered in these decisions was not the reference to science, but the ability of the European regulation to use the articles of the European Treaties related to the internal market. Consider for instance the ban of flavoured cigarettes, which was challenged before the ECJ and eventually upheld in 2001. What the court decision[141] and the corresponding press release insisted on was the "smooth functioning of the internal market"[142]. When challenged in the European Court of Justice, the key legal argument is about the possibility and modality of market integration, and not about science[143]. Harmonizing the European market, here, is the source of legal

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[139] E.g. Bates and al., 1999; Bialous and Yach, 2001

[140] Peeters et al., 2015

[141] The Court referred to Article 95 related to harmonization of the internal market in those terms in its 2001 decision:
The argument that the Directive ought to have referred to scientific facts to justify the new provisions it incorporates in relation to the Community measures previously adopted cannot be accepted. Paragraph 80 above clearly shows that Article 95 EC does not require developments in scientific knowledge to be invoked if the Community legislature is to be able to adopt measures on the basis of that provision. Case 491/01, Para. 170

[142] "The new EU directive on tobacco products is valid", Press Release N° 48/16, Court of Justice of the European Union, Luxembourg, 4 May 2016.

[143] There is, however, another legal arena where scientific arguments are explicitly considered, and it was active in the case of tobacco. The European regulatory texts about tobacco were challenged at the World Trade Organisation (WTO) on scientific grounds. Some countries argued that the claim that the prohibition of products with characteristic flavours, on the grounds that it would "actually contribute to lower rates of smoking initiation by young people", lacked scientific basis, while others contested the evidence that these products and other additives were harmful (Gruszczynski, 2015). The labelling requirements of the 2014 tobacco directive were similarly contested, as some member countries questioned the evidence of a causal link between health warnings and customer behaviours (about which "direct causality" was said to require "material and quantifiable" evidence), and between packaging requirements (e.g. at least 20 cigarettes per packet) and the protection of human health (Gruszczynski, 2015). The distinction between cigarettes and other kinds of tobacco products, as well as the introduction of a mandatory traceability system (instead of existing voluntary ones) were also contested on scientific grounds. The challenges at the WTO have never threatened the European regulation of tobacco. Here, the case for existing scientific evidence is strong and the European parties won the case (Gruszczynski, 2015). We will see in Chapter 5 that other European regulations were challenged at the WTO, in ways that were much more problematic, and forced the European institutions to make their scientific argumentation explicit.

reasoning, and thereby a powerful lever for the European regulation to enter new domains of intervention.

What emerges from the successive court cases about tobacco is a negotiation over the appropriate way to use market integration as a basis of European integration[144]. This dynamic has been widely commented by legal scholars. Some of them are critical. They consider that the court cases are poorly argued[145], or that none of the measures of the Tobacco directives can be said to have a visible internal market objective, as member states can still adopt more constraining regulatory measures for a health objective[146]. Others see the Tobacco court cases as successive approximations of what subsidiarity means in practice, what role the ECJ is supposed to play in moving the European regulation forward[147], and to what extent the European institutions can use the organisation of the internal market as a source of legitimate action[148]. Some have spoken of the "political pragmatism" of the Commission, which has deliberately framed its regulatory intervention in such a way that the Council could decide by majority voting in order to avoid requirements for unanimity, as when matters of public health are concerned[149].

These discussions are signs of the importance of the case of tobacco, as an illustration of the ambivalence of European pseudo-federalism, which grounds its legitimacy in the regulation of the single market while pursuing public health objectives[150]. These debates display a particular problematization of the European intervention revolving around the extension of European power through the regulation of market objects. By adding new qualities to European objects (as cigarettes become risky objects expected to be presented as such) or eliminating others (as these cigarettes cannot be differentiated according to their taste),

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[144] The fact that Tobacco Advertising was not followed by a growing annulment of measures of harmonization can be interpreted as an illustration of a dynamic well known to legal scholars of European integration. As Treaties do not provide enough details, the Court needs to interpret them in determining the scope of European institutions' interventions, and the Commission then adapts to these rulings (Weatherhill, 2011). In fact, Tobacco Advertising served as a useful jurisprudence for subsequent European texts, and the subsequent European texts on tobacco focused on practices that could impact cross-border economic exchanges, such as advertising by means that could circulate across borders (e.g. media or the Internet) (Adamini et al., 2011: 70; see also (Hervey, 2004).

[145] Liu, 2009

[146] Crosby, 2002

[147] Kumm, 2006; Tridimas, 2001; Weatherill, 2011

[148] Horsley, 2012

[149] Adamini et al., 2011

[150] Nicola and Marchetti, 2005

European interventions make and remake new objects to pursue wider objectives than the mere harmonization of the internal market, although harmonization serves as a legal basis.

Harmonizing European market objects, extending European power

The examples of local food products and tobacco products show that the harmonization of market objects is not just about ironing out differences for the sake of eliminating trade barriers. It can include other considerations, such as the protection of local food products, or the protection of human health. The condition to do so is that European objects are disentangled in such ways that the local is turned into a European quality, or risk is turned a problem of market integration. This is of course a limitation. Controversies such as those related to the halloumi cheese show that there are alternatives constructions of the locality of food products, and cigarettes are often more strictly regulated at the national scale (for instance through taxes). But market harmonization provides legal and practical resources to extend the scope of European intervention to new domains, such as rural development or health policy.

Below, I discuss two examples, financial products and hazardous waste. Both cases are additional illustrations of how the harmonization of European objects has provided an avenue for extending the scope of European intervention[151]. These two examples also interest me because they display the problematic consequences of this mode of intervention. The discussions that revolve around the post-crisis regulation of certain financial instruments show the pervasive democratic issues that the extension of European power through market objects raises. The case of hazardous waste displays another issue: if market objects are vehicles for Europe to act on environmental matters, is it then possible to exclude certain entities from the market?

[151] The extension of majority voting at the Council in the 1990s should have made cases such as tobacco less numerous, as in a growing number of instances, acting for the sake of harmonization does not afford a clear advantage in terms of avoiding conditions of unanimity at the Council. However, the harmonization argument still has an important role in European environmental policy (Holzinger, 2011). The successive amendments of voting rules at the Council have been the topic of a specific literature in political science, which has examined the complex power plays implied by the extension of majority voting and the subtle rules defining what a majority at the Council is (e.g. Hosli, 1996; Leech, 2002).

Financial risks or risks to the stability of the European market?

The United Kingdom played an important role in the tobacco story. It argued against the extension of European power, considering that objects such as cigarettes might well be European as long as they remained market objects, and were regulated as such and not by introducing additional characteristics meant to control their risks. The British position toward the extension of the perimeter of European interventions through market harmonization is visible in other situations as well. Another significant example is that of financial risks. The post-financial crisis reaction targeted some of these immaterial objects, as European institutions attempted to regulate credit-default swaps (CDS). CDS are insurance-like products. When tied to sovereign debts and further distributed, they can lead financial actors to bet on the default of sovereign countries, thereby making this very default even more possible. CDS are particularly interesting for our concern here, since the ways in which they were made European objects – and the legal challenge that this initiative faced from the United Kingdom – directly echoes the dynamics described in the case of tobacco products.

In 2012, a new European regulation[152] defined rules that CDS had to follow to be authorized on European markets. These rules were related to the potential risks they caused for the stability of financial markets. So-called "naked" CDS (i.e. CDS with uncovered position) were banned when concerning sovereign debt (this was a direct reaction to the sovereign debt crisis), and transparency requirements were made much more stringent. This can be read as yet another example of making a European object – this time an immaterial one, by including qualifications related to the risks of the product, to make it eligible for circulation on the European market.

As in the tobacco case, the logic of the regulation was dual. A direct answer to the financial crisis and its aftermath for European sovereign debts, the regulation targeted financial risks. But the regulation also asserted its basis on the need to integrate the internal market. This dual logic was at play as the regulation granted considerable additional power to a European agency created in 2011, called the European Securities and Market Authorities (ESMA). Under the 2012 regulation, ESMA was granted an independent power of intervention to

[152] Regulation (EU) No 236/2012 of the European Parliament and of the Council of 14 March 2012 on short selling and certain aspects of credit default swaps (OJ 2012 L 86, p. 1)

counter "a threat to the orderly functioning and integrity of financial markets or to the stability of the whole or part of the financial system in the Union"[153]. In such cases, the regulation authorized ESMA to replace national regulators in requiring further disclosure of information, or to introduce constraints on CDS transactions. ESMA was granted a competency related to financial risks, and the regulation did so under the Single Market provision of the Treaty, namely Article 114 of the TFEU (the same legal basis as in the tobacco directives).

Article 28 of the 2012 regulation was challenged by the United Kingdom at the European Court of Justice, in an action that was widely considered as yet another attempt by the UK "to protect the City of London from the increasingly interventionist forms of EU financial regulation"[154], following previous critical stances and anti-regulation activism. Article 28 of the regulation was contested on the grounds that it extended far too much the power of ESMA, in contradiction with previous rulings limiting the power of bodies to which the EC delegates executive action, and with undue reference to the integration of the internal market.

The Court eventually upheld the regulation[155]. The ECJ considered that ESMA's interventions related to the stability of the pan-European financial market[156], and that the Union legislation could use the most appropriate method of harmonization, depending on the context and the circumstances, especially in domains where there were "highly technical and specialist analyses to be made"[157]. It described the power granted to ESMA as "technical" and "executive" in nature, not "quasi-legislative", as the UK (and the Advocate-General) had argued. One can identify the same underlying logic as in the tobacco case, in that regulating European market objects (in that case CDS) made it possible to use the regulation of the internal market as legal grounds for European intervention on risks. In this

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[153] Article 28(2)(a)

[154] Marjosola, 2014: 2

[155] Judgment of the Court (Grand Chamber) of 22 January 2014. United Kingdom of Great Britain and Northern Ireland v European Parliament and Council of the European Union. C-270/12

[156] *"the harmonisation of the rules governing such transactions is intended to prevent the creation of obstacles to the proper functioning of the internal market and the continuing application of divergent measures by Member States." (paras 113-114) The Court added that ESMA's activities in particular related to reacting to market behaviour with cross-border implications (which national authorities alone could not resolve) threatening the integrity of financial markets or the stability of the financial system (para. 115).*

[157] Judgment of the Court (Grand Chamber) of 22 January 2014. United Kingdom of Great Britain and Northern Ireland v European Parliament and Council of the European Union. C-270/12: para. 102

case, the Court confirmed that "financial market integration" (the overall legal basis of European action) could require action on "financial stability" (i.e. related to risks). Thus, the control of financial risk was introduced "in the name of market integration"[158].

The Court's decision was well received by some. The Green Party, for instance, welcomed the ability of the European legislation to challenge "the continuing application of divergent measures by Member States". The Green Party described those measures as "obstacles to the internal market" [159], interpreting the ECJ's ruling as confirmation that the regulation of the internal market was "an appropriate legal base for safeguarding financial stability" [160]. Others, however, in terms closely related to those used more than a decade earlier by Weiler, questioned "how far the single market can be stretched as a governance framework"[161]. While some saw a victory of market regulation against de-regulation forces, others challenged not only the legal basis to do so, but also the democratic implications of the significant extension of European power that the Court upheld. As in the tobacco rulings, the opposition line separated pro-regulation actors (and primarily the European Commission) from those who supported private interests and softer regulatory interventions. Yet the very logic of European intervention through the regulation of market objects also has a strong (anti)democratic dimension, clearly apparent in the opinion of the Advocate-General (which the Court did not follow):

> *"the outcome of the ESMA power is not harmonization, or the adoption of uniform practices at the level of the Member States, but the replacement of the national decision-making by EU level decision-making"*.[162]

Within the U.K., this provided further cause for concern among those worried about the growing power of the European institutions. A good illustration is the General Council of the

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[158] Kalman, 2014

[159] Giegold, Sven and René Repasi, 2014, "Assessment of the Judgment of the European Court of Justice in Case 270/12, United Kingdom v. Council and European Parliament. Impact of this judgment on the proposal of the SRM regulation", The Greens, January 23, 2014.

[160] As set out in Article 114 TFEU

[161] Dorn, 2014: 95

[162] Opinion of Advocate-General Jääskinen, 2013 para. 53, quoted in Dorn, 2014: 94. The Advocate-General proposed that a better legal ground would have been the so-called "flexibility clause" of the Lisbon treaty (Article 352), which allows the EU to take measures when there is no specific legal basis in the Treaty, subject to a unanimous vote in the Council, assent of the European Parliament, and prior notification of national parliaments, a condition for "enhanced democratic input" in the words of the AG, and to be situated in the debate about the role of national parliaments (Dorn, 2014: 95)

Bar of England and Wales, which lamented in a 2016 report the "apparent trend towards extending the use of the internal market Treaty legal basis, Article 114 TFEU, to matters beyond what we believe to be within its scope"[163].

In this case, increasing the power of a European agency in charge of a "technical" task was justified by market harmonization needs. Of course, what is qualified as technical should not be taken for granted, if only because of the strong opposition it encountered from the United Kingdom. The U.K. considered that the 2012 regulation of CDS was also very political in that it granted extensive powers of intervention to a European body outside of what had been envisioned in the Treaties. The Court, by contrast, ruled that financial stability and financial market integration could not easily be distinguished. Accordingly, the ECJ considered that defining and acting on CDS for the sake of market stability was a technical task that could be reserved for the European institutions in charge of the technicalities of market integration. Such boundary work confirmed a significant extension of European power, once again made possible by regulatory interventions on market objects.

Regulating externalities or making market objects?

So far, we have discussed situations where the European Commission extends the scope of its intervention by acting on market objects and adding qualities to them. In the examples we considered, these qualities were related to the local origins of food products, the health risks of cigarettes, or the financial risks of credit-default swaps. But there are situations where the very fact that certain entities are *market* objects is not self-evident. Consider for instance the case of hazardous waste. The harmonization of definitions of what counts as a hazardous waste is particularly difficult, as it requires extensive standardization of little known technical specifications[164]. But the very objective of harmonization is itself problematic. Should the EU craft an environmental policy determining levels of control of hazardous waste? Or should it regulate it as a market entity expected to circulate across Europe? These questions relate to the perimeter of European power, as a positive answer to the second question gives more scope of action to the European institutions. But they also

[163] This is an excerpt from a report written by the General Council of the Bar of England and Wales (2016, *Response to Internal Market Synoptic review. Article 114 TFEU – an expanding legal basis?*, quoted in Wallgren, 2016)

[164] Fischer, 2011

pertain to the overall relevance of considering hazardous material as economic entities worthy of trans-European exchanges in the first place, something that has been controversial since the 1980s[165].

As in the case of tobacco products, the ECJ has been playing a major role in delineating the scope of acceptable European intervention. The 1991 Titanium Dioxide case was an illustration of the questions outlined above. As commentators put it, it asked:

> *"was waste a commodity to be permitted free movement within the SEM and subject to the exclusive regulation of the EU? Or was waste an environmental externality to be denied free movement according to the precautionary principle and subject to the shared control of the Member States and the EU?"*[166].

The context was then about the 1989 Titanium Dioxide directive, which the European Commission had initially introduced under Article 100a of the Treaty related to the internal market (Article 100a later became Article 114), only for the Council to amend the legal basis to Article 130s on environmental policy. The shift to Article 130a implied that the Council would use the unanimity rule instead of majority voting. The Commission challenged this reversal. In other words (and in a situation which we already encountered above in the case of tobacco), Article 100a gave much more power to the Commission, since it only had to convince a majority of the Member States and not all of them for its proposal to pass. In a decision not foreign to other rulings that upheld the market integration legal grounds, the ECJ considered that the European Commission was right in using Article 100a, in that while environmental concerns could be dealt with under Article 100a, Article 130s could not be used to pursue internal market objectives. Scholars of the Single Market interpreted this ruling as "a political choice by the ECJ legitimating the enhanced role of supranational institutions in the decision-making process post-Single European Act"[167].

As in the case of tobacco, the ways in which the European Commission could use market integration as an acceptable legal basis for acting on risk issues proved controversial. Subsequent initiatives were contested, and the outcome was not always positive for the Commission. For instance, member states are still in a position to object to the shipment of

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[165] Laurence and Wynne, 1989

[166] Armstrong and Bulmer, 1998: 211

[167] *Ibid*: 212

waste, construed as "an exception to the free movement of goods"[168]. Yet these twists and turns offer one more illustration of the importance of the making of market objects out of environmental externalities for the sake of additional policy objectives. Since the first controversies over hazardous waste, similar issues have spurred debates about other kinds of waste, particularly electronic waste, which some European programmes would be keen to turn from problematic industrial externalities into valuable market entities[169].

The case of hazardous waste shows that the extension of European power through the harmonization of market objects raises a problematic issue. The European Commission has been attempting to disentangle hazardous waste from their local sites of production, make them circulate across Europe, and create incentives for their treatment by turning them into new market objects. Counter-propositions suggest that hazardous waste should *not* be considered market objects, but inherently risky entities to be carefully controlled and with limited circulation. These discussions show that while the dream of a disentangled market extends the scope of European power, it also implies extending the perimeter of the market with problematic consequences.

Extending European power

The previous chapter discussed a way of making European objects through disentanglement. The examples that we encountered in this chapter can be seen as illustrations of an extension of this disentanglement. Consumer products do not have to be stripped of their local characteristics to become European objects. Local qualities can be integrated into the description of what makes a wine "from Languedoc" or a cheese "from Cyprus". Consumer products can be granted additional characteristics related to their risks, as the examples of tobacco products and financial instruments show. While the construction products had to be deprived of any additional qualities when receiving the CE mark, the objects we focused on in this chapter were in some cases standardized in such a way that differentiation was not allowed (e.g. by adding flavours to cigarettes) and in others distinguished, as food products can be, according to their place of production, irrespective of their physical similarities.

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[168] *Ibid*: 216

[169] Kama, 2015

These examples, however, are less exceptions to the harmonization project than extensions of it. In all the cases discussed here, European interventions were directed at market objects, in several senses. First, the objects we considered are caught in economic exchanges, or meant to be (for instance, waste products are turned into commodities). Second, the European interventions that we considered in this chapter ground their legal legitimacy on and adopt the method of the harmonization of the Single Market. Problematizing European objects as market objects, in this dual sense, offers much flexibility to European institutions, and above all the European Commission, to operationalize policy interventions that go beyond the elimination of trade barriers. In some cases, this means that additional institutional means of control are introduced (such as ESMA in the case of financial products). In general, it relies on an institutional construct whereby the organisation of the market is problematized as a technical matter expected to be left in the hands of the European Commission and its satellite bodies.

The fact that the European interventions encountered in this chapter have been controversial shows that this mode of European action has strong consequences in terms of the delimitation of European power. If there is indeed an economic constitution of the European Union, of which the previous chapter provided an illustration, then the examples discussed in this chapter show that it can be stretched in significant ways. As critical scholars and reluctant member states have noted, this extends the domain of the European market, and ultimately raises questions for the nature of European democracy. The mechanism of extension of European power that this chapter describes supposes that the harmonization of market objects is a task defined as “technical”, which provides considerable leeway for the European institutions to pursue policy goals in various domains. The examples discussed here have shown that these policy goals may relate to domains as diverse as rural development, the protection of human health, or the stability of financial markets. The European interventions targeting these goals may be well intended, but as they proceed by subtracting whole chunks of policy issues from the domain of political deliberation, they inevitably limit the democratic possibilities of European integration.

Chapter 4. Energy and the problematics of disentanglement

There are European objects that do not easily turn into market entities. This chapter focuses on energy, and discusses European interventions that were intended to turn it into a European market object, or to use immaterial market objects to govern it. We will see that these interventions have barely been stable, and that the modality and the very objective of disentangling European energy markets have been controversial. The chapter shows that the problematization of energy in European circles illustrates the challenges of disentanglement, as well as significant re-compositions of how to harmonize European markets. It is indeed not always easy to extract standardized market entities from energy flows, and to consider that energy markets can and should function outside of the realm of political negotiation. This is because of the specific material and social properties of energy. First, the European objects related to energy are of a different nature than consumer goods. Energy is a flow, of electrons or molecules, which is usually difficult to trace and which requires accounting practices to be exchanged. If energy can become a European object, it is a strange kind of object, one that articulates electrons or molecules and accounting entities. Second, energy has been problematized within the European regulatory arenas not only as a market issue, but also as an environmental concern. While climate change has become a pressing problem, the question of how to make energy sustainable has become an issue in policy circles. The environmental concern is not antithetical to the market, and we will see that market-based instruments have been used to respond to it. Third, European interventions can target the harmonization of the energy market but the Treaties leave the detail of energy policy to Member States. The development of renewable energy, even if supported by European regulations, remains above all a national concern in the domain of national policies[170]. Thus, only coordination and indirect interventions seem to be available for European policies to promote sustainable energy. In a way that echoes the mechanism

[170] Solorio and Jörgens, 2017; Strunz et al., 2017

described in the previous chapter, we will see that creating new markets for immaterial entities has been considered as a possible means of European intervention, with mixed degrees of success.

These considerations show that energy policy, in Europe as elsewhere, necessarily brings together social and technical dimensions[171]. In this chapter we will see that extracting energy and turning it into a European object is challenged by the technical and social qualities of energy. This challenge is visible when considering attempts at "liberalizing" the European energy market, as the European Commission has been attempting to do for the past twenty years. I start this chapter by discussing this objective, showing that it is a case of attempted disentanglement of European objects meant to be market entities. The difficult harmonization of European energy markets has resulted in the re-affirmation of the objective of disentanglement. But the harmonization of sustainable energy policies has taken a different path. I comment on attempts at introducing markets for immaterial entities carrying the positive or negative externalities of energy, as a means to promote sustainable energy. The so-called "carbon market" is an illustration of the introduction of a new, immaterial and standardized, European market object, which, in ways that echo what we encountered in the previous chapter, can serve as a proxy for extending the scope of European interventions. But other initiatives related to biofuels and "green certificates" that were expected to carry the green value of energy show that similar attempts at introducing new immaterial market objects faced significant challenges. Rather than a neatly disentangled market, these latter cases eventually led to a plurality of markets, all entangled with day-to-day negotiations explicitly seen as political. As such, these examples suggest that harmonization can be envisioned in ways that differ from the disentangled market. These alternative paths are also prone to instability. They emerge from situations where objects become explicitly political, in that they are closely associated with national policy choices, the concerns of various publics, and the economic interests of powerful companies.

Making energy European

[171] Miller, Iles and Jones, 2013

The idea that energy could be considered a driver of European integration is not new. Electricity networks resulted in trans-European ties even before European integration acquired a legal dimension[172], and energy was at the core of the early European Treaties, such as CECA and Euratom. But energy has regularly been considered as a problematic domain of European interventions. The early initiatives in coal, steel and nuclear energy came short of turning energy policies into coordinated European initiatives[173]. In the 1960s the European Commission nevertheless still envisioned a "Community energy policy" that would "fully integrate the energy sector into the Common Market"[174]. In 1964 the Council stated that this "community energy policy" was an objective[175], but it was only with the 1986 Single European Act that the objective of the internal market for energy was included in a European Treaty[176]. This objective was controversial among Member States and gave rise to complex negotiations[177], eventually resulting in numerous initiatives undertaken by the European Commission in the 1990s and 2000s to integrate the European energy market, mostly electricity and gas. Since the 1990s, the Commission's predominant mode of action regarding energy has been related to the organisation of the internal market.

The materiality of the objects at stake, however, significantly differs from the consumer goods we encountered in the previous chapters. Electricity is made of electrons; oil and gas are made of hydrocarbon compounds. Yet electrons or hydrocarbon compounds cannot be differentiated according to their qualities. Electrons produced through renewable sources are not physically different from electrons from coal or nuclear plants. Hydrocarbons resulting from biofuels instead of conventional fuels are not physically different from conventional hydrocarbons. Another material constraint is linked to the practical organisation of economic exchanges, the infrastructural needs of which (electricity networks and gas lines) severely constrain their possibilities. These infrastructures also make it difficult to track the physical components of energy, especially in the case of electricity. In transnational circulation, the real-time equilibrium of the electricity network means that it is

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172 Misa and Schott, 2005

173 See Barry and Walters, 2003 about Euratom

174 European Commission, First Guidelines for a Community Energy Policy: Memorandum Presented by the Commission to the Council. COM (68) 1040 Final, Brussels: European Commission, 18 December 1968: 5, quoted in Malby, 2003: 437-438

175 Malby, 2003: 437

176 Council of the European Union, The Single European Act. 17 February 1986: Art 8a

177 Padgett, 1992

impossible to track the exact circulation of electrons. When Germany buys electricity from French producers, the electrons originating from the French plant may well circulate through many other sections of the network, possibly even through other countries.

In practices, companies do not sell electrons or molecules as such, but other market entities, typically promises to provide certain amounts of gas or electricity by a given time and at a given price. Accordingly, the European regulatory interventions concerning the energy market do not act on objects similar to construction products, food products or cigarettes, as described in the previous chapters. Rather than standardizing electrons or molecules, they act on the relationships between actors. Thus, Directive 96/92/EC subdivided the electricity and gas sectors into four segments, namely "generation", "transmission", "distribution" and "supply", and opened generation and supply to competition. The key objective here is the "unbundling" of ownership or, in other words, "the separation of energy supply and generation from the operation of transmission networks".[178] The logic is economic, and presented as follows by the European Commission:

> *If a single company operates a transmission network and generates or sells energy at the same time, it may have an incentive to obstruct competitors' access to infrastructure. This prevents fair competition in the market and can lead to higher prices for consumers.*[179]

In gas and in electricity, unbundling means that integrated companies need to separate their activities, so that any producer or supplier could use the infrastructure networks. The objective of unbundling implies a European energy market where new economic agents operate: first, companies generating and/or selling energy, and benefiting from access to the necessary infrastructure networks in order to do so; and second, consumers expected to choose from an increased number of energy suppliers.

Although the types of entities that will be exchanged are not explicit, the hypotheses underpinning the unbundling objective are. They posit that energy can circulate as a market object, provided that the many ties connecting it to local contexts of production, circulation or consumption are severed. In practice, the objective of unbundling means that traditional

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[178] "Market legislation" page, DG Energy website, https://ec.europa.eu/energy/en/topics/markets-and-consumers/market-legislation, accessed May 16, 2018

[179] *Ibid.*

economic mechanisms are seen with suspicion, since they tie energy exchanges to multiple concerns and interests, often grounded in national considerations, such as the security of supply, the determination of prices, or the support for national companies. Consider for instance the case of long-term contracts. Their role in the gas industry prior to liberalization can be described as follows:

> *The transmission companies, linking major sellers and buyers had an especially strong position. They would use their monopoly to serve as an intermediary, buying from a few producers and selling to national monopolies, with high profits. As a consequence there was no gas-to-gas competition. Natural gas was priced according to competing energy, most often oil. The benefit of the system was that long-term contracts made it possible to secure the financing of gas field and transportation development, and thereby security of supplies.*[180]

Electricity economists similarly consider that long-term contracts have been used as a way of ensuring that energy would continue to flow in the future, thereby securing the possibility to invest in large-scale projects[181]. By contrast, the European Commission views long-term contracts as instruments that make unbundling more difficult. As economist Frédéric Marty puts it, "long-term contracts are seen as a substitute for vertical integration"[182], as they tie distributors and producers in long-term partnerships often made exclusive through restrictive clauses.

There are other ties that need to be severed if the objective of unbundling is to be met. The very benefit that unbundling is supposed to provide depends on the expected ability of energy transmission and distribution to serve as a neutral platform supporting economic exchanges. The liquid market envisaged by the Commission requires dense infrastructure networks to operate. Yet a geographical understanding of the European energy market shows that this imagined liquid market is at best a network one, with nodes, dense and other regions, linked by a limited number of connections[183]. This network is a filamentary space, which imperfectly covers the geographical space of Europe. It is characterized by considerable friction. Extending it can trigger intense public controversies, as high-voltage

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[180] Anderson and Sitter, 2009: 11

[181] Finon and Roques, 2008; Marty, 2016

[182] Marty, 2016: 10

[183] Bouzarovski et al., 2015

power line projects routinely face public opposition and are discussed for years in participatory settings[184]. The extension of energy infrastructure networks runs into pressing geopolitical challenges when the plan is to cross the external borders of the Union. The network itself cannot be considered as a passive platform on which exchanges could freely happen once material connections are there. This is particularly visible in the case of the electricity network, because of the impossibility of tracking down electrons. Only models can be used to approximate the physical flows of electrons across the grid. And only models can be used to check the conjunction between the commercial flow of money across member states exchanging electricity, and the physical flow of electricity expected to correspond to these economic exchanges. Modelling these exchanges is a sensitive process, prone to benefit a particular Member State or another, depending on how it is conducted[185].

Re-affirming disentanglement

An illustration of the dream of disentanglement, if ever there were one, is the idea that the European energy market would ensure an exchange of energy, like any other good, without any constraint. The assumption is that energy can be become a European market entity while other concerns, related to the security of supply or national priorities, are set aside. But energy has proven to be a difficult case.

Even if we stick to the network industries, energy seems particular. In the case of the telecommunication industry, Neil Fligstein has shown how it "has been reorganised on a European basis"[186], as firms and European institutions have partnered in opening the market[187]. The picture significantly differs for energy. Specialists of the gas market speak of "fuzzy liberalization"[188], and in 2005 economists considered that "the EU's goal of a single European electricity market remained a long way off"[189]. When assessing the electricity

[184] With regard to the France-Spain high-voltage power line, see: Ciupuliga and Cuppen, 2013

[185] Benhamou, 2018; Laurent and Benhamou, 2018

[186] Fligstein, 2008: 111

[187] This does not mean that telecommunications are an illustration of a supranational approach to European integration, and that energy is by contrast characteristic of the power of intergovernmental negotiation. In the case of telecommunication, member states' policy choices and the European regulation were aligned (Schmidt, 1996).

[188] Andersen and Sitter, 2009

[189] Jamasb and Pollitt, 2005: 12

market in preparation for future regulations in the mid-2000s, the European Commission itself was critical[190]. It considered that "gas and electricity markets remain national in scope, and generally maintain the high level of concentration of the pre-liberalisation period"[191], and that "incumbents rarely enter other national markets as competitors"[192]. The conclusion of the European Commission's analysis was that market integration had not been conducted far enough. Its inquiry had "identified a number of serious shortcomings which prevent European energy users and consumers from reaping the full benefit of the liberalisation process"[193], and the current situation "gave scope for exercising market power"[194]. Thus, the EC report recommended that competition law be more rigorously enforced, and regulatory measures in favour of further opening the market were taken. The fact that it had not worked so far was taken as a sign that it required more effort.

This re-affirmation of the objective of market making has legal and regulatory consequences, as Member States are asked to pursue the objective of unbundling. But it also impacts the practical organisation of the exchanges of energy. A telling illustration here is that of the technical management of electricity exchanges across Member States. The process is complex because it relies on an approximation of the physical flows of electricity from one country to the next. These flows can only be modelled, because electrons can circulate in many branches of the network, and their exact trajectory cannot be known. Once the physical flows are estimated, then commercial exchanges can take place. These estimations have traditionally been conducted on a bilateral basis, with national network operators engaging in regular discussions about the quantifications of electricity flows. This situation is currently evolving, as the European Commission and certain national network operators[195] attempt to approximate physical flows through automated calculation procedures. These

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[190] European Commission, (2007), DG Competition report on energy sector inquiry, Brussels, 10 January 2007 SEC(2006) 1724 . http://ec.europa.eu/competition/sectors/energy/2005_inquiry/full_report_part1.pdf (accessed May 16, 2018); hereafter EC, 2007.

[191] EC, 2007: 7

[192] EC, 2007: 8. In turn, this spurred other assessments (by external consultants), who concurred in considering that "competition in wholesale electricity generation is not functioning properly" (Structure and Performance of Six European Wholesale Electricity Markets in 2003, 2004 and 2005, presented to DG Comp 26 February 2007, prepared by London Economics in association with Global Energy Decisions: 2; http://ec.europa.eu/competition/sectors/energy/2005_inquiry/electricity_final_execsum.pdf, accessed May 16, 2018).

[193] EC, 2007: 17

[194] EC, 2007: 17

[195] The French network operator has been playing a key role in this process.

calculations aim to automatize the organisation of electricity exchanges across borders. As a close observation of the proponents of these new methods shows, automation is expected to ensure that these exchanges are not outcomes of bilateral negotiation, and instead are realized only through the technical rationality of the market[196]. The engineers and economists developing these methods hope to manufacture a new space of calculation, not limited to bilateral exchanges between national regulatory bodies, but modelling all electricity flows across Europe so that financial exchanges could better approximate the reality of physical exchanges. They consider this approach to be "more objective", and contrast it with the "subjective" interventions of Member States eager to defend their own interests, for instance related to the security of supply[197]. As such, calculation methodologies can be seen as ways to disentangle market operations – understood as a matter of mere technicalities – from the political negotiations involving Member States. They are the practical instruments through which transnational exchanges are expected to operate, as pure market operations unconstrained by political interventions. This choice of course makes the construction of the model a sensitive process, and grants much latitude to the engineers and economists in charge of the developing them. It points to the crucial role of calculation techniques in purifying the market from politics, and to the fact that this operation has itself a politics[198].

The European interventions consisting in calculating the transnational physical flows of electricity are illustrations of the pervasiveness of the objective of disentanglement. As energy is expected to be turned into a European market object, many instruments are needed to ensure that there is actually such a thing as a European energy market. In parallel, the overall objective is stated explicitly in the European regulation. The 2009 Third Energy Package, for instance, comprising two directives and three regulations, restated the objective of providing for "competitive and integrated energy markets" that allowed "European consumers to choose between different suppliers, and all suppliers, irrespective

[196] These considerations are based on an ethnographic study conducted by Jérémie Benhamou (Benhamou, 2018), on the basis of which we conducted an analysis of the ordo-liberal reasoning of calculation technologies in European electricity markets (Laurent and Benhamou, 2018).

[197] These words are regularly used by the engineers and economists in charge of implementing these models (Benhamou, 2018).

[198] See Porter, 1996

of their size, to access the market"[199]. That the many physical, economic and legal ties in which energy is caught make this objective challenging has not transformed the expectation.

A European policy for sustainable energy?

The 2007 Treaty of Lisbon nevertheless mentioned a larger scope of European action on energy, including the "security of energy supply in the Union" and the promotion of "energy efficiency and energy saving and the development of new and renewable forms of energy"[200]. These new themes of concern about energy were included in a series of legal initiatives, included the successive "Energy Climate Package", which defined target shares of renewable energy in each Member State, and target objectives for CO_2 emission reductions and energy efficiency. These objectives were regularly framed as the "20-20-20" targets (20% share of renewable energy, 20% reduction of carbon emissions, 20% increase in energy efficiency by 2020). The need for a "Community-wide strategy" for the promotion of renewable energy had been made explicit already in the mid-1990s[201], at the same time that the electricity and gas directives were adopted. In 2014, reflecting the growing importance of the energy issue for European action, the Juncker Commission launched the "Energy Union". This programme was headed by a high-ranking official: a dedicated vice-president of the European Commission, in charge of the diverse European objectives related to the energy market, security of supply, and climate objectives.

But how then can the objective of market-making be articulated with other policy imperatives, for instance related to the development of renewable energy? Scholars of European energy policy state that while these domains are presented as priorities, they are indeed subsumed under the general objective of market development[202]. They point to the potential contradictions between the environmental goals of renewable energy, and the consequences of liberalizing energy markets, which could clash with national support

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[199] European Commission, 2014. Single Market for Gas & Electricity. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee of the regions. Progress towards completing the Internal Energy Market COM(2014) 634, quoted in Bouzarovski et al., 2015

[200] Article 194, Lisbon Treaty

[201] European Commission, 1996, Communication from the Commission: Energy for the future: Renewable sources of energy. Green Paper for a community strategy, Brussels: COM (96) 576.

[202] Tagliapietra, 2014

measures for renewable electricity, suspected of introducing trade distortions[203]. Should we consider that there is a domain of policy action (supposedly European), where energy is expected to be turned into a market entity, and other domains (supposedly national) where it is a public concern? Is there an opposition between the forces of market liberalization, on the one hand, and growing support for active policy interventions for the sake of the environment, on the other? This reading would be too simplistic, as indicates the fact that the development of renewable energy can fit perfectly well with market reasoning. The support for sustainable energy has indeed been framed in the terms of market development, notably of green technologies. The most visible European support for renewable energy has taken indirect forms, such as regular benchmarking of Member States' progress towards their target shares of renewable energy, or funding mechanisms for European research projects. These initiatives can be described in terms of the "experimentalist governance" undertaken in domains where European competence is limited, which is seen by some as a creative way of functioning in a distributed manner[204], and by others as the extension of the competition logic, as Member States are asked to compare themselves with one another[205]. Thus, one should also adopt a nuanced position when considering European interventions that articulate market and environmental objectives. Many of them have used market-based instruments, and certainly have not been conceived as antithetical to the market. But the interest of sustainable energy for our reflection on European objects is broader. It also points to the pervasiveness of the dream of disentanglement of European market objects, and the possibility to re-imagine harmonization in different terms.

A prime example to start this discussion is provided by one of the most visible European interventions in the field of energy and climate, the European "carbon market" known in regulatory terms as the "Emission Trading System" (ETS). The ETS was introduced in 2007, and was expected to give a price to carbon, thereby producing incentives to reduce carbon emissions. Within the ETS, the carbon emissions of each Member State are capped. Emission allowances are then allocated, or auctioned off. They can also be bought and sold. These carbon allowances become immaterial entities expected to circulate as market objects

[203] Marty, 2016
[204] Sabel and Zeitlin, 2010
[205] Bruno et al., 2006

throughout Europe. They are standardized and are designed to be a vehicle to make all emissions "the same" through carbon quantification[206]. With the ETS, European environmental policy was expected to progress thanks to a new market object, the immaterial carbon allowance. This object is disentangled from the local site where it originates, and carries throughout a European market the carbon cost of energy production and use. Standardizing market objects to extend the perimeter of European interventions is a mechanism we encountered in the previous chapter. In the case of the ETS, the introduction of a new market object could circumvent the difficulties encountered by other approaches. As taxation issues require unanimity voting at the Council, introducing a European carbon tax was a difficult task[207]. By contrast, and in a way that echoes the cases discussed in Chapter 3, creating a new harmonized market was less constraining for the European Commission.

The European carbon market has been controversial, mostly with regard to the efficiency of this instrument. Does the ETS indeed incentivize carbon-emitting actors to change their behaviours? The price of the carbon allowance has remained low, so it seems that the answer to this question is negative. But why it is so is interpreted in different ways. Critics point to the inherent issue of a market-based mechanism, prone to fraud, leaks, and ultimately unable to introduce the constraining actions necessary for the fundamental changes that de-carbonization requires[208]. Another interpretation, often heard in the European institutions, is that the immaterial market of carbon allowances has not been functioning as a proper market. Instead, allowances have been allocated for free, and quotas are set in ways that result from political considerations. For instance, Member States from Eastern Europe claim that their carbon-heavy industrial sector would mean that they bear a disproportionate cost, which should be compensated for by free allowances. Proponents of the ETS see these negotiations as political disturbances[209], claiming that the carbon market should instead be properly sealed off from politics. They argue in favour of an increase in the amount of allowances that are auctioned off instead of allocated for free, and of automating

[206] MacKenzie, 2009

[207] Aykut 2014. This was re-stated by a former energy advisor to then president of the Commission Barroso during an interview (October 9 2017, Brussels)

[208] Lohmann, 2010

[209] See a discussion in Doganova and Laurent, 2019

the calculation of national quotas or the elimination of excess allowances[210]. These are two recent amendments made to the ETS, intended to ensure that the carbon market can operate as an autonomous market outside of political considerations. The difficulties in ensuring that the ETS functions cause European actors to pursue and extend the objectives of disentanglement. By many respects, the ETS is a prime illustration of an approach that aims to carve out a domain for the market, and which defines policy-making as the ability to ensure that the boundaries of the market are well maintained[211].

Biofuels and the political consequences of imperfect disentanglement

In the European discussions about how to reconcile market and environmental objectives, the carbon market has become a focal point and an ambivalent reference. This is because the European carbon market explicitly raises issues related to disentanglement. Typical questions are: how to disentangle a new market entity expected to become European, especially an immaterial one that carries the externalities of energy? How to disentangle the technicalities of market organisation from the political negotiations of policy-making? These questions have been raised because the objective of disentanglement has never disappeared. The ETS might well be a unique example though. Other attempts to disentangle immaterial entities from energy have been far less conclusive.

The case of biofuels deemed "sustainable" is an illustration of imperfect disentanglement, which is visible when compared to the ETS[212]. Originally promoted as a green alternative to conventional oil, biofuels have been proven to have negative environmental consequences when their production destroys natural habitats, particularly in tropical regions. The 2009 Renewable Energy directive introduced criteria for biofuels to be considered "sustainable"[213]. These criteria relate to the conditions of production (what kind of land does the producer use?) or to the overall assessment of carbon emissions (how much carbon will

[210] Liliana Doganova and I repeatedly heard these considerations in meetings at the European Commission about the ETS, and in interviews with officials at the European Commission in charge of the ETS. We comment on this point in (Laurent and Doganova, 2019).

[211] Laurent and Doganova, 2019

[212] This section is mostly based on a fieldwork I conducted in 2012/2013, and which is presented in more details in (Laurent, 2015)

[213] In the 2009 Renewable Energy Directive (Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources). I will get back to these criteria and the fierce debates they cause in Chapter 7.

eventually be released by the production of x tons of biofuels?). As such, they do not make biofuels produced in sustainable ways physically different from other biofuels produced through deforestation or resulting in land use change. These considerations imply that criteria such as those introduced in the European regulation need to be tied to a labelling system whereby what happens on the site of production can be tracked as biofuels circulate through the industrial chain of transformation. This is all the more challenging as the production of biofuels involves a long industrial chain through which raw materials are gradually transformed into usable fuels. At each point on this chain, flows from different sources of biofuels are mixed with one another. Eventually conventional fuels and biofuels are also mixed together, so that the fuel bought by the end user is a mixture of a wide range of fuel sources.

An obvious answer to the issue of tracking sustainable biofuels is the construction of a dedicated industrial chain, where only biofuels that meet sustainable criteria can flow. Companies were quick to underline the costs and practical difficulties of such an operation, which requires no less than building a whole new infrastructure dedicated to biofuels. The European Commission accepted their argument[214]. The preferred option of professional organisations such as the European Biodiesel Board[215] was that a market of immaterial certificates be created. They proposed, similarly to the ETS, that industries be able to buy and sell immaterial sustainability certificates, and to attach them to, or detach them from, the biofuels they produce or transform. In the world of environmental certification, the approach is known as “book and claim”. For instance, the Roundtable on Sustainable Palm Oil (RSPO) organizes a system within which certified plantations can sell virtual sustainability credits to companies that commercialize biofuels[216]. These latter companies can re-label their biofuels as “sustainable” once they have bought these credits. Applied in Europe, the book and claim approach was intended to disentangle a new European object (a tradable certificate guaranteeing the sustainable quality of biofuels) and a new European market, that of immaterial certificates in the guise of the ETS.

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[214] European Commission, 2010, Commission staff working document impact assessment, accompanying document to the report from the Commission to the Council and the European Parliament on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling. COM(2010)11 final / SEC(2010) 66.

[215] European Biodiesel Board, 2008, Adoption of the Renewable Energy Directive. EBB official position and voting recommendations on the amendment table in the ITRE Committee, Brussels, September 2008.

[216] Mol and Oosterveer, 2015

The ETS was however an ambivalent reference in the discussions about the sustainability of biofuels[217]. NGOs were strongly opposed to the book and claim method[218]. Eventually, the European Commission stated that "the 'book and claim' method is open to fraud and will not deliver a price premium"[219]. Thus, it considered that producers of sustainable biofuels should be allowed to sell biofuels at higher prices, which, in turn, required a connection between the qualification of a biofuel as "sustainable" and its material characteristics. Accordingly, the 2009 Renewable Energy Directive introduced not only sustainability criteria, but also a method meant to keep track of the "sustainable" quality defined by those criteria. This method is known as a "mass balance system". Within this system, each industrial operator needs to balance the amount of sustainable matter bought (or produced) and the amount of sustainable products sold, by means of a dedicated accounting system. Operators can choose to sell fuels not qualified as sustainable in spite of being derived from "sustainable" raw materials. In this case, they will retain a "sustainability credit" in the accounting system, for later use. In other words, the mass balance system disentangles the immaterial sustainable quality from the materiality of the molecules. The disentanglement is only partial though, and the critical reference to the ETS justified that the immaterial sustainable credit was at least partly attached to the materiality of biofuels. Thus, subsequent texts introduced in the wake of the 2009 Renewable Energy Directive made it impossible to sell sustainability credits, or to keep them eternally on the accounting books[220]. No such thing as a separate market for immaterial sustainability credits would exist.

There is another aspect to this imperfect disentanglement, namely the tight articulation between market-making and policy-making operations. The implementation of the mass

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[217] The critical analysis of the book and claim system is on-going. The European Commission commissioned evaluations of the potential value of book and claim approaches, which have constantly been judged to be less effective and more prone to fraud (Ecofys, 2012, Analysis of the operation of the mass balance system and alternatives, report produced for the European Commission). RSPO recently announced that it no longer endorsed GreenPalm, a system for trading certificates ("Big changes afoot for the book and claim model: what you need to know and do", news of 30 August 2016 on the RSPO website (https://rspo.org/news-and-events/news/big-changes-afoot-for-the-book-and-claim-model-what-you-need-to-know-and-do, last accessed on 21 March, 2018).

[218] Laurent, 2015

[219] European Commission, 2010, Commission staff working document impact assessment, accompanying document to the report from the Commission to the Council and the European Parliament on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling. COM(2010)11 final / SEC(2010) 66: 36

[220] Laurent, 2015

balance system was delegated to "sustainability schemes" through which companies are supposed to be certified in order to be able to sell biofuels qualified as sustainable. These schemes are private and involve different actors, both international and European. Existing international certification systems applied to be recognized as sustainability schemes. Others were tied to professional organisations active in Member States, and could then involve only companies or a wider set of stakeholders. For example, the German sustainability scheme ISCC, which was developed with direct funding from the German federal government, involves environmental organisations such as the WWF and is well evaluated in terms of "stakeholder engagement" in benchmark studies of the sustainability schemes[221]. By contrast, 2BSvs (Biomass Biofuel Sustainability Voluntary Scheme), which was created by a French professional organisation in the agro-industrial sector, was perceived as a mechanism organised by the industry for the industry, and expected to stick to the minimal requirements introduced by the European regulation.

Sustainability schemes are platforms for negotiating between stakeholders, or for representing the interests of particular industrial sectors. This is so because they implement the mass balance system in different ways. Some of them frame large spatial perimeters of calculation, others restrict it to individual silos. This has much to do with the particularities of harvesting different raw materials. For instance, sugar cane in South America is transformed at the site of harvest, and producers usually apply the mass balance system for each of those sites. Accounting practices also differ according to the temporal validity of sustainability credits, according to the geographic location of harvest and whether there is a limited time of harvest (e.g. in Western Europe) or multiple harvests are possible[222]. Thus, the source of variation among sustainability schemes is the fact that they are often developed with particular conditions of agricultural production in mind. During an interview, a 2BSvs manager I met described the situation in those terms: "operators might choose the

[221] NL Agency, 2012; see Ponte, 2014 for a critical account

[222] Yet another source of variation relates to 'waste and residues'. The European regulation states that when a company buys raw material or biofuels made of 'waste and residues', it can double the amount of sustainable products it inputs into its accounting sheet. Furthermore, categorizing products as 'waste and residues' allows the economic operator not to verify the biodiversity condition and not to take the corresponding GHG emissions into account. This is meant to encourage the transition to so-called second-generation biofuels, possibly made from agricultural residues, and, in any case, required not to compete with food production. Yet what counts as waste and residue for one industrial operator might be the primary material for another. Accordingly, the list of waste and residues may vary from one sustainability scheme to the next and from one member state to the next, and may evolve according to negotiations between national public administrations and industries.

system that benefits them the most"[223], adding: "they also engage in developing schemes that will benefit them the most"[224].

Instead of disentangling a market from policy discussions, the sustainability scheme systems were platforms in charge both of organising the biofuel market of and negotiating with stakeholders. As a result, biofuels can be diversely qualified as "sustainable", although how they differ is invisible for the end consumer. The biofuel market can be said to be harmonized, in that the same rules apply throughout Europe, but this harmonization is vastly different from what emerges from the European carbon market. Unlike the immaterial carbon permits, "sustainable biofuels" are mixes of material and accounting entities, and are European objects that are imperfectly disentangled. Here, rather than the market being seen as isolated from policy worlds, the technicalities of market organisation are thought of as outcomes of political negotiations.

A European market for green certificates?

The coexistence of variously qualified biofuels, according to the diversity of the sustainability schemes, is a consequence of a certain scepticism about the environmental value of the carbon market. It results in a situation that vastly differs from the disentangled market of standardized immaterial entities, as in the case of the ETS. It was a deliberate outcome of the European regulation. There is another example where the imperfect disentanglement was not a desired outcome, but rather an unexpected consequence of the impossibility to carve out a European market for immaterial entities. This is the case of immaterial entities carrying the environmental value of sustainable electricity, the so-called "green certificates"[225]. I will develop this example with more details than others in this chapter. It has a crucial interest for me, as it will illustrate both the persistence of the dream of the disentangled market, and the possibilities of alternatives.

In the early 2000s, the European Commission envisioned setting target shares of renewable energy for Member States, and allowing them to exchange immaterial market entities to

[223] Interview, Paris, September 2012. He was speaking about waste and residues.

[224] Interview, Paris, September 2012.

[225] In this section, I draw on a research project conducted with Brieuc Petit on the history of European green certificates (Laurent and Petit, 2019)

help them reach their targets. Member states producing a lot of renewable energy could sell immaterial "green certificates" to other member states. For instance, Poland could reach its sustainable targets by balancing its coal-based electricity production with immaterial green certificates bought from Austria, where the abundance of hydro-electricity meant that the national target had been exceeded. The Commission also envisioned that energy producers, be they public or private, could buy or sell green certificates according to the sustainable energy they produced. Operators of wind turbines would sell the green colour of their electricity to producers using coal or nuclear, who could then paint their electricity in green, and sell it as such to their consumers. The monetary value of the immaterial certificates carrying the green colour would then serve as incentives for producers to invest in renewable energy production means.

Environmental and consumer groups have been wary of this market-based mechanism. In a public statement announcing a recent report where the cartoon below can be found (fig. 1), some of them explained that green certificates "can be traded independent of the electricity sold. Suppliers do not have to produce or purchase any kilowatt-hour from a renewable power plant and can use [them] to build a green façade for their marketing"[226]. For these organisations, green certificates are deceptive tools, leading consumers to mistakenly think they buy sustainable energy from companies operating carbon-intensive production means.

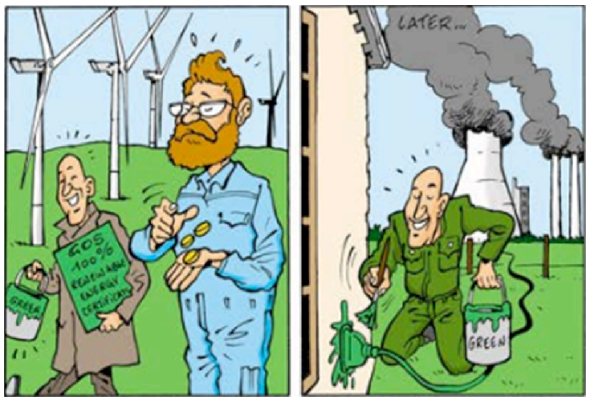

Figure 1: Painting electricity in green with green certificates, BEUC, 2016

[226] "Make 'green electricity' markets work for consumers and energy transition", Joint statement of consumer organisations, environmental NGOs and renewable energy associations, 9 March 2017, https://windeurope.org/wp-content/uploads/files/policy/position-papers/Joint-Statement-on-Green-Electricity.pdf last accessed 6 May, 2019. The report that this press release followed is: BEUC, 2016, *Current practices in consumer-driven revewable electricity markets*, BEUC mapping report, Bureau Européen des Unions de Consommateurs.

Within the European Commission however, market-based instruments have been seen as relevant tools for energy policy. In the early 2000s, they were promoted by DG Competition, in charge of fair competition in the internal market. But other departments of the Commission saw an interest in these devices as well. DG Energy's Directorate for Competition and the Internal Market, and DG Environment also argued in favour of a European market for green certificates[227]. At the time, DG Environment was designing the future European carbon market. The two projects were indeed similar. The ETS gave a price to energy's negative carbon externality, and the envisioned green certificate markets would give a price to the positive externality of the "green-ness" of energy. In both cases, market mechanisms would provide incentives to invest in more sustainable industrial processes.

As it considered green certificates, the Commission took inspiration from existing mechanisms. A private market of green certificates had been introduced in the late 1990s, and some member states had been using cap and trade mechanisms to encourage the development of sustainable energy[228]. The Commission also launched detailed examinations of the would-be market for green certificates. As the carbon market had been the subject of numerous simulations in the late 1990s and early 2000s[229], so experiments revolved around the envisioned market of green certificates. In 2001, several European projects simulated a market of green certificates[230], in order to demonstrate that it would provide incentives for energy producers to invest in renewables. In the virtual world of these simulations, the game of incentives meant that all wind turbines would be built in the North of Europe where winds are strongest, and all solar panels in the Mediterranean countries. In these simulations, a disentangled immaterial market of harmonized green certificates made economic rationality the driver of the development of renewable energy in Europe. These projects supposed that the sustainable quality of energy could be made "the same" through a harmonized green certificate. They considered that energy policy was a matter of

[227] Here I draw on an interview with an official at the European Commission's DG Energy, who had followed the developed of the instrument (Brussels, 19 December 19 2016).

[228] For instance, the Netherlands had introduced a *Groenlabelsystem* that associated voluntary target levels of sustainable electricity production with a market for green labels (Komor, 2004). This system was described to Brieuc Petit and I when we interviewed a former employee of the Dutch professional organisation of electricity producers.

[229] Cartel et al., 2019

[230] In May 2001, as the "European Renewable Electricity Certificate Trading Project" (RECerT) gathered almost 150 private and public organisations from over 15 countries, and simulated a market of green certificates, thus compressing ten years of trading activity into 16 hours of market operation.

optimizing production costs and environmental benefits, and not an industrial policy used by national states to develop new sectors. In a world where those hypotheses were verified, a European market of green certificates could be manufactured, similarly to the way in which the European carbon market was about to be created.

For all the initial enthusiasm about green certificates, the European regulatory initiatives of the 2000s did not constitute the European market that had been simulated. The electricity industry union (Eurelectric), as well as the European Wind Energy Association, supported the Commission's proposal of a market of green certificates. But the European Renewable Energy Federation, members of the Green group in the European Parliament, and environmental non-governmental organisations such as Greenpeace, opposed the envisioned market of green certificates. They considered that the disentanglement of the sustainable quality from energy suffered from the impossibility of properly standardizing what counts as "sustainable": should co-generation be included, for instance? Should old production sites like hydro-electric dams be included? How could green certificates provide incentives to invest in new sustainable means of production? In short, they saw the green certificates as yet another green-washing trick offered to polluting industries (see Figure 1 above).

The decisive opposition came from Member States, and particularly those such as Spain and Germany that had already introduced policy mechanisms guaranteeing prices of renewable energy. These Member States defended their subsidies for renewables from an industrial policy perspective, opposing the disentanglement of energy policy from industrial policy. They managed to shift the debate on renewables support from economic efficiency and liberalization requirements to "the issue of subsidiarity and (…) the EU's competence to impose an EU-wide support scheme"[231]. In doing so, they opposed the Commission's definition of renewable energy as a European political and economic issue to be handled by the market, and re-entangled the support for renewable energy with its political and institutional ties.

After repeated attempts by the EU Commissioners for Energy, Christos Papoutsis and Loyola de Palacio, to persuade the European Parliament and Council, the Commission finally

[231] Lauber, 2011: 178

retracted its proposal[232]. The responsibility for designing a renewable directive was transferred from DG Energy's Directorate for Competition and the Internal Market to a newly founded Renewable Energy Division. In May 2000, the EU Commissioners recognized that it was "too early to decide on a Community-wide framework regarding support schemes" and that, "in accordance with the principles of subsidiarity", the choice of renewables promotion instruments ought to be left to the Member States[233]. Green quality had been re-localized back within the national space.

Accordingly, the 2001 directive on renewable energy[234] did not create a European market for green certificates. It only introduced a requirement for Member States to introduce "Guarantees of Origin" (GoOs). Guarantees of Origin were not meant to be "exchangeable green certificates", but were expected to help customers identify the renewable origin of the energy they would buy[235]. When Member States implemented the 2001 directive, they defined GoOs in significantly different ways. Austria, Denmark, Germany and the Netherlands replaced the private green certificates with Guarantees of Origin. By contrast, Italy, Luxemburg, Portugal and Spain distinguished between Guarantees of Origins – considered to be merely non-tradable, traceability instruments –, and private certificates expected to be market objects. Other green certificates were progressively added to this already complex landscape, as some Member States introduced their own national systems of green certificates. The EC then encouraged them to do so, considering that a European market for green certificates would eventually be organised across Europe. These green certificates were introduced in Italy (1999), Belgium (2002), and the UK (2002), then followed by Sweden (2003), Poland (2005) and Romania (2005). They were significantly different from one another[236]. What counted as "green" differed from one system to the next, in some cases even within the same country. For instance, in Belgium, the Walloon system considered co-generation to be a renewable energy source, unlike the Flemish

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232 Interview, DG Energy, European Commission, December 16, 2016; cf. Lauber, 2007.

233 European Commission, 2000, Proposal for a Directive of the European Parliament and of the Council on the promotion of electricity from renewable energy sources in the internal electricity market, *Official Journal of the European Communities*, C 311 E/320-327.

234 Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market

235 "Guarantees of origins" were meant to "increase transparency for the consumer's choice between electricity produced from non-renewable and electricity produced from renewable energy sources".

236 Ménanteau, Lamy & Finon 2002

system. Definitions of which installations could use green certificates also differed. For instance, the UK system limited the access to green certificates to post-1990 installations, while Italy limited it to post-1999. Other green certificates did not restrict access, so that old hydro-power installations could still sell the sustainable value of their electricity as much as new wind turbine farms or solar panel installations. While the European carbon market managed to rely on a technical infrastructure ensuring that emissions are made comparable with each others[237], the market of green certificates that the Commission had envisioned could not count on a stabilized infrastructure able to uncontroversially evaluate what counts as "green", and how.

Instead of the Europe-wide market of green certificates that had been envisioned and simulated in the late 1990s, what emerged after the 2001 Directive was a collection of fragmented markets. Instead of a harmonized European green certificate, Guarantees of Origins not always meant to be tradable, private certificates meant to circulate throughout Europe, and national certificates have been coexisting in Europe since 2001. They circulate in different markets: the voluntary one organised by private actors, national markets for national green certificates, and markets for green energy tied to Guarantees of Origin. One of the consequences of this fragmented landscape is that it provided avenues for private actors to act strategically, as they can choose green certificates with the lowest prices, and adapt their use to the diverse support mechanisms introduced by Member States.

The European Commission did not give up on green certificates after the 2001 directive. When working on what would become the 2009 renewable energy directive, the Commission proposed to replace the national indicative objectives for the share of renewable energy in each Member State by mandatory targets[238]. The introduction of legally binding targets raised the question of whether countries that might have difficulty in reaching their objectives could include renewable energy imports – be they virtual or accompanied with physical movements of electricity. The call from these countries – notably Malta, Luxembourg and the Netherlands – for the adoption of flexibility measures provided a new opportunity for the European Commission to defend the European-wide market for green certificates that had been envisioned a decade earlier. During the legislative process,

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[237] MacKenzie, 2009

[238] Communication from the Commission: Renewable Energy Road Map. Renewable energies in the 21st century: building a more sustainable future, Brussels: COM (2006) 848.

the Commission proposed to make guarantees of origin a freely tradable commodity across Europe. Within such a system, Member State governments were expected to act as buyers or sellers of guarantees of origin, according to their needs. The Commission's proposition was again defended as "a way of cost effectively exploiting Europe's renewable energy potential"[239]. Unlike the green certificates market promoted by the Commission in the late 1990s, the "open 'market' for guarantees of origin" was not expected to replace the Member State's support schemes but would indirectly "result in price convergence, regulatory reforms and eventual harmonisation of support schemes"[240]. As such, it was deemed to be an instrument that would not circumvent the prerogatives of the Member States in matters of energy choices, and could be described as compatible with the principles of subsidiarity. The European open market for guarantees of origin as envisioned by the Commission again faced the joint opposition of renewable energy associations, environmental non-governmental organisations, and the governments of Spain and Germany. The latter argued that it would put their feed-in support systems at risk and jeopardize renewables development. The heavy opposition from proponents of existing national support systems undermined the Commission's proposal[241]. It was eventually rejected by both the European Parliament and the Council[242].

From an imagined European market of renewable energy to green protectionism

The story of the European green certificates is that of failed disentanglements. Constructing a European market for green certificates resembling the ETS would have meant severing the dense ties linking energy policy with national interests – a daunting enterprise, to say the

[239] European Commission, 2008, Commission staff working document. *Document accompanying the* Package of Implementation measures for the EU's objectives on climate change and renewable energy for 2020, COM(2008) 16, 17,19 : 96.

[240] European Commission, 2008, Commission staff working document. *Document accompanying the* Package of Implementation measures for the EU's objectives on climate change and renewable energy for 2020, COM(2008) 16, 17,19 : 106.

[241] See: (Toke, 2008; Nilsson et al., 2009). To accommodate the opponents of its propositions, the Commission included in its proposal an opt-out clause that allowed Member States to limit import and/or export of guarantees of origin if it was to hinder their ability to reach their target. The legal weakness of the opt-out clause was the uncertainty as to whether limitations to trade would comply with internal market rules once the open market for guarantees of origin would have been created.

[242] The final text adopted on 23 April 2009 replaced the envisioned market of guarantees of origin by "optional cooperation mechanisms" for Member States to count renewable energy produced abroad, and to calculate their national share of renewable energy (Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources).

least. It would have harmonized what counts as "green" across Europe. It would also have shaped a single European policy objective, namely using incentives for the promotion of renewables, whereas green certificates have always had diverse objectives. When Brieuc Petit and I talked to the promoters of the certification of green energy, we realized that some of them saw it as a tool to inform the consumer, and ensure the development of renewable energy thanks to "the enthusiasm of the market"[243]. Others explained that they engaged in the development of green certificates to benefit from differences in national tax-relief mechanisms[244]. The idea at green certificates could provide economic incentives for investment in renewable technologies was indeed mentioned, but it was one objective among many.

The eventual fragmentation of certificates and their associated objectives raises issues for the internal European market. Are exchanges (both of virtual certificates and energy itself) possible across borders? Can a company producing renewable energy in one country benefit from the support scheme of another country and, if so, using which certificate as a proof that its energy was indeed "green"? Can a company sell energy made "green" by combining diversely certified electricity? How to ensure that countries count the export and import of "green" energy in consistent ways? These questions point to an argument for harmonization in the guise of disentanglement. But in contrast to the case of the ETS, or that of energy markets, the long-term objectives of disentanglement have been abandoned for the sake of harmonizing sustainable energy policy. The failed attempts at green certification point to an alternative harmonization. In that, the story of green certificates conflates with that of European sustainability policies as a whole. This is a story of growing coordination, as national targets for renewable energy consumption are introduced at European level, and European-wide objectives are defined. But it is also a story of gradual re-localization of policy choices, because of the disruption introduced by cross-border exchanges.

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[243] Brieuc Petit and I interviewed some of the actors who had been at the origin of the private system for the exchange of green certificates. We presented a more detailed analysis of the history of the green certificates in a recent chapter (Laurent and Petit, 2019).

[244] Interview with Secretary General of the Association of Issuing Bodies (AIB), 20 December 2016. This person used to be a British industrialist and early proponent of green certificates. He explained that private suppliers of electricity realized that they could virtually export a set amount of hydro power from Scotland to northern England and import the same quantity of coal-fired electricity from England into Scotland for the purpose of avoiding England's Fossil Fuel Levy on carbon emissions. In doing so, and without any physical movement of electricity, they could value the "green-ness" of renewable electricity production and achieve substantial profits. He mentioned during the interview the expected profits: "at least six figures and possibly seven".

In the early 2000s, the increasing amount of cross-border exchanges of green certificates became a political issue in countries that enabled renewable energy produced abroad to benefit from their support schemes. In the Netherlands, for instance, a favourable fiscal support for the consumption of renewable electricity caused massive (virtual) imports of Norwegian hydro-electricity. This was to be expected, given that one of the motivations of private actors to develop green certificates in the first place had been to make profits out of differences in countries' support mechanisms for renewable energy[245]. In 2002, about three quarters of the Dutch renewable consumption, and thus of its public subsidies to renewables, could be attributed to imported certificates – many of which were from Norwegian hydroelectricity producers. The resulting substantial tax losses and public funding of foreign energy producers became increasingly problematic. The Dutch government then decided to cancel the fiscal advantage to renewable electricity consumption and replace it with feed-in tariffs that would support *local* production only. Following the example of the Netherlands, other countries such as Italy and the UK changed their legislation so that national public support for renewables would be reserved to domestic electricity production[246].

This re-localization of sustainable energy policies can be read as a counter-movement to harmonization attempts. It was discussed before the European Court of Justice in the 2010s, when electricity suppliers Essent Belgium and Ålands Vindkraft were denied access to (respectively) the Flemish and Swedish support schemes, because of the foreign origin of the electricity they produced. Between 2003 and 2009, Essent Belgium had used Guarantees of Origin from Wallonia, Norway, Denmark and Sweden in order to fulfil its obligations under the green certificates and quota support scheme operated in Flanders. Since only green certificates showing proof of production of electricity in the Flemish region could be accepted according to the legislation, the Flemish Regulatory Authority for the Electricity and Gas Market (*VREG*) imposed on Essent Belgium penalties for a total amount of approximately 1.5 million euros. Ålands Vindkraft applied to the Swedish Energy Agency

[245] Interview with Secretary General of the Association of Issuing Bodies (AIB), 20 December 2016.

[246] Although Community law prohibits "quantitative restrictions on imports and all measures having equivalent effect" (Article 28 EC), the reservation of national support schemes to nationally-based companies had been agreed by the European Court of Justice in the early 2000s. It was later acknowledged by the European legislator, who indicated in the renewable energy directive of 2009 that "Member States shall have the right to decide (…) to which extent they support energy from renewable sources which is produced in a different Member State" (Directive 2009/28/EC).

(*Energimyndigheten*) for the green certificates and quota scheme. The facility that the company operated was a wind farm located in Finland, which was connected to the Swedish electricity distribution system. The application was refused by the *Energimyndigheten*, on the grounds that the certificates scheme was reserved to electricity production located in Sweden. Essent Belgium and Ålands Vindkraft claimed that denying them the benefits of national support schemes because of their use of green certificates was incompatible with the principles of free movement of goods. They argued that green certificates were consumer goods like any other, and should be granted the authorization to travel across borders.

The legal authorities of Flanders and Sweden decided to refer the cases to the European Court of Justice for a preliminary ruling. The two cases came to the forefront of public attention when the Advocate-General of the Court Yves Bot, in charge of both cases, argued against the national support schemes. In its Conclusions of 8 May 2013 for the Essent Belgium case and of 28 January 2014 for the Ålands Vindkraft case, he stated that the decisions of the Flemish and Swedish public bodies breached the Community principles of free movement of goods. He considered that the objective of environmental protection in promoting renewable energy was not a national one, but was better served by acting at European level, including by using transfers of immaterial entities such as green certificates[247]. Yves Bot considered that the conclusion of the 2009 directive allowing member states to set up national support schemes from which they could exclude foreign renewable energy suppliers was illegitimate in light of the EU Treaty. As the judges rarely diverge from the Advocate-General's opinion, the outcome of the court cases was expected to have far-reaching political consequences. The press anticipated the "end to the fragmentation of national energy policies in the EU" and "a big push to the integration of the EU energy market"[248].

The ECJ, however, did not follow the conclusion of the Advocate-General. In both cases, it considered that the Member States could indeed reserve their support mechanisms to domestic producers. In Chapter 3, I discussed cases such as tobacco products, hazardous

[247] Opinion of Advocate General Bot, delivered on 8 May 2013, Joined Cases C-204/12 to C-208/12 Essent Belgium NV v. Vlaamse Reguleringsinstantie voor de Elektriciteits- en Gasmarkt ; Opinion of Avocate General Bot, delivered on 28 January 2014, Case C-573/12 Ålands Vindkraft AB v. Energimyndigheten

[248] "Exclusive: The end is near – for national renewable energy subsidy schemes in the EU", Energy Post, Karel Beckman, 26 February 2014

waste or financial products, where the European Court of Justice has supported the extension of European power through the use of European objects construed as market entities. Renewable energy offers a telling contrast. There, the ECJ upheld a growing trend for re-localization. What could have appeared, through Yves Bot's opinion, as yet another opportunity to make a European-wide circulation of green certificates possible, instead further re-localized energy policy choices.

After the failure of the European Commission's attempts at harmonizing a market of green certificates, and at using virtual transfers across Member States, these episodes point to a form of harmonization that differs from the dream of the neatly disentangled market, carefully isolated from policy, and where well harmonized objects (energy or virtual entities tied to energy) circulate. Instead, the situation seems to be that each Member State pursues its own energy choices for the sake of overall European objectives, such as the "20-20-20" targets (20% share of renewable energy, 20% reduction of carbon emissions, 20% increase in energy efficiency by 2020) that the 2008 Energy package introduced. In this situation, the markets of sustainable energy and their associated immaterial entities are tied to national concerns, related to industrial policies, local preferences, or broad political choices. They articulate the economic organization and political issues, and are, to use the expression introduced by sociologists of markets that I introduced in chapter 2, "concerned markets"[249]. Whether or not these concerned energy markets can provide a path for rethink European harmonization in terms that differ from disentanglement (of the market from policy, of energy from its local ties) remains to be seen. So far, this alternative has never been articulated other than by referring to practices of indirect competition, such as benchmarking[250]. But one can also see this situation as an opportunity to re-imagine what harmonization could be, and how European objects can contribute to it.

Conclusion

In June 2017, I sat in a meeting during which an official at the Internal Energy Market of the European Commission's DG Energy addressed a group of French high-ranking civil servants. The meeting was informal, and was not related to any specific policy programmes. It was,

[249] Geiger et al., 2014
[250] cf. Bruno et al., 2006

however, an opportunity for the European official to present the overall logic of the European approach to energy, as the next "Energy package" was being negotiated. The European official, who had placed right next to her notes an energy economics textbook, presented an ideal vision of a future Europe, in which citizens would be in full control of their energy. They would have access to real-time information about their consumption, thanks to individual smart meters, and would be able to sell renewable energy thanks to the availability of technologies (be they solar panels or wind turbines). In short, they could act as well-informed active and calculating agents. She was quick to mention however that achieving this goal still required a lot of work. Member States remained reluctant to open up their markets and access to their grids, to the many operators that could produce sustainable energy. Price mechanisms were still controlled by national regulators. European citizens were not always given sufficient information about how the energy they bought had been produced. They still did not all see the interest of gaining access to real-time information about their use of energy.

While this vision of Europe's energy future was met with polite scepticism in an arena where long-time proponents of state-controlled nuclear energy were present, it offered a glimpse into an imagined Europe. In this vision, energy would be a perfectly disentangled market object, one that could be bought or sold by any European actors, be it a large industrial company owned by a Member State, or an individual eager to engage in sustainable energy consumption and thereby act as an economic agent. Here, support for renewable energy and the concern for market harmonization are not contradictory objectives. Not only is renewable energy expected to give rise to new markets of "green" technologies, it also extends the scope of production and consumption choices. As such, it perfectly fits in an imagined Europe where citizens are above all consumers, and the common good is defined in economic terms. Realizing this imagined Europe requires that energy become a market object. Only then can it circulate freely, and only then can a European market operate in a distinctive sphere separated from policy. As environmental concerns come into the picture, immaterial entities holding the negative or positive environmental externalities of energy can be introduced. These entities, of which carbon credits are the prime illustrations, are new market objects and, as they are expected to provide economic incentives to adopt sustainable behaviours, they extend the perimeter of economic reasoning.

We saw in this chapter that this imagined Europe has barely been achieved, including because of the material and political characteristics of energy. Attempted disentanglements have occurred at multiple levels in attempts to extract market objects from flows of electrons and molecules, "green certificates" from the materiality of electricity, and market organisations from nation-based industrial policies. But these operations have been difficult and, in the cases of sustainable biofuels and green certificates, have failed to be conducted as expected. Biofuels are governed by the coexistence of various sustainability schemes, which entangle market organisation and political negotiations and define diverse biofuels. The European approach to sustainable energy has moved away from a Europe-wide optimization according to economic criteria, and towards an understanding of the diversity of Member States' choices regarding their energy mixes.

What emerges from this chapter is a messy situation. One can identify the persistence of the disentangled market objective in European interventions targeting energy, and its integration in technical processes such as calculation tools meant to extract energy flows from the domain of political negotiations. Yet sustainable energy has also given rise to other types of harmonization, whereby the organisation of markets is an explicit political terrain, and European objects are tied to collective concerns, economic interests, and national policy choices. The "concerned markets" that accompany the development of sustainable energy show that the dream of disentanglement may be significantly re-defined because of the technical and social properties of the European objects at stake. It results in a significant re-thinking of the principles and practices of harmonization.

The cracks in the disentanglement project that this chapter examines can lead to two reactions. The first one, as evident in the case of the liberalization of the energy market, consists in re-affirming the objective of market integration, re-stabilizing the boundaries that isolate the domain of the market by replacing political negotiations by automated calculation techniques, and further promotes devices such as smart meters that attempt to turn European citizens into individual consumer led by the economic rationality. As the short scene above shows, this reaction is well present at the European Commission. But it can be contrasted with a second one, which makes the organisation of concerned markets an explicit political issue, and which then considers that what matters is the institutional work able to make it robust enough to integrate the varieties of concerns related to energy.

Although it is not seen as such in the European institutions in charge of energy, this latter perspective might offer a path for re-imagining harmonization.

Chapter 5. In search of European objectivity

From market objectives to European objectivity

The previous chapters have told a story of the growing power of the European institutions, particularly the European Commission, as they make European objects expected to circulate on the European market. In these cases, the legal and moral justification of the European intervention is the would-be harmonized market, which then offers a path for realizing other policy objectives. Described in those terms, this mode of action could well account for what is probably the most visible European object of all, namely the euro. The European currency might be the ultimate European object, a symbol of European unity (although not used for that purpose everywhere in the Union), and a standardized material entity[251]. The single currency may well be the most visible result of the belief that market integration will lead to political integration. It relies on a considerable extension of European power, as sovereignty over monetary affairs is transferred to the European level, and to an expert body, the European Central Bank, whose alleged independence is one of its main characteristics[252]. Today's financial crisis has shown the consequences of this extension of power. As citizens of countries such as Greece, Spain, or Italy, suffering from the effects of austerity are allured by anti-euro political parties' promises, the pressure put on them by European officials can all too easily be seen as the worst manifestations of the technocratic tendency of the European institutions. The euro, a monetary construct from which there is no escape, might be another illustration of the dynamics explored in the previous chapters on economic goods. Here, as in the cases of construction products, food products, tobacco products, credit default swaps, or energy, European intervention is grounded on the ability to craft European objects, and to problematize policy interventions as a matter of organising markets.

[251] Although it differs very slightly across countries, as backside of the coins represent national symbols.
[252] Vauchez, 2016; see Hall and Franzese, 1998 ; McNamara, 2002.

For the euro as for CE-marked construction products, tobacco or food products protected by indications of origin, European intervention articulates the making of European objects intended to circulate on the European market, and European institutions expected to ensure that they are stabilized as such. The reference to scientific expertise is present, but not crucial in the legal reasoning and overall objective. But what about science as a resource for harmonization? Can European interventions be conducted in the name of knowledge recognized as objective, and, if so, in what ways? Can one speak of a "European objectivity" that would provide an authoritative voice to produce knowledge about objects, possibly under the guise of a European public expertise? Objectivity in this context refers to the ability of public institutions to produce facts deemed scientifically robust and politically legitimate. In many cases, objectivity adopts the format of the "view from nowhere", meaning, as philosopher Thomas Nagel writes, that "a form of thought is more objective than another if it relies less on the specifics of the individual's makeup and position in the world"[253]. This definition of objectivity has a history. It echoes what Peter Galison and Lorraine Daston call "mechanical objectivity", that is, a way of manufacturing scientific objects through the delegation to technical instruments expected to make the scientific subject disappear[254]. It is at the heart of the American expertise bodies that have been organised according to the separation between "risk evaluation" (expected to be scientific) and "risk management" (expected to be political)[255].

When translating this approach to the European institutions, the case of the European Central Bank immediately comes to mind. The ECB has been playing on a repertoire of independence to affirm itself as an authoritative voice able to tell the truth about financial matters[256]. As scholar of European integration Antoine Vauchez puts it when speaking of European institutions such as the European Central Bank, "independence becomes the matrix for a new type of political legitimacy (…) based on its exteriority in relation to the 'democratic passions' of partisan politics and the 'national egoisms' of diplomatic relations"[257]. The European Central Bank can be regarded as an expert institution, possibly the most powerful European one. As it actively engages in maintaining the distinction

[253] Nagel, 1989: 5
[254] Daston and Galison, 2007
[255] Jasanoff, 1990; Hilgartner, 2002
[256] Vauchez, 2016: 30
[257] Vauchez, 2016: 30

between economic rationality, and negotiations framed as "political", its self-description echoes an understanding of objectivity as the outcome of a "view from nowhere". Episodes when Member States seek to bring discussions to a "political" terrain - as the Greek prime minister attempted to do when he contested the "technical" decisions imposed on his country in the midst of the sovereign debt crisis[258] - can be regarded as the logical (and hardly felt) consequences of this boundary work. The European Central Bank might be an institution that plays on both the dream of the disentangled European market and that of a centralized and authoritative (if not authoritarian) European objectivity. But in many other cases, scientific evaluation has been controversial, and European objectivity much more elusive. This chapter focuses on technical objects, for which scientific uncertainty and the pervasive implications of economic actors such as powerful corporations make it problematic to think of European objectivity as the outcome of a single authoritative voice.

Should one conclude from these examples that objectivity is a failed European dream? If there are institutional arrangements whereby scientific evaluation and political negotiations are not separated, but articulated with each other, can one still speak of objectivity? STS works are useful resources to examine these questions. They propose to examine the many institutional constructs that define the conditions under which public facts are deemed epistemicaly and politically satisfactory. In doing so, they have explored redefinitions of objectivity. For instance, Alberto Cambrosio and Peter Keating speaks of "regulatory objectivity" in situations where objectivity is based on shared norms negotiated by a diversity of stakeholders, as in the field of biomedicine. This implies other institutional arrangements, where the ability to include economic actors (such as pharmaceutical companies) is key[259]. Sheila Jasanoff has contrasted the view from nowhere so prevalent in American institutions with other institutional constructs where the personal identity of the expert, or the social groups to which he or she belongs, are crucial ingredients of objectivity[260]. This means that one can envision European objectivity in terms that differ from the centralized epistemic authority expected to be independent from political negotiations. Whether such a different approach manages to be clearly articulated in Europe

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[258] "Tsipras declares death of Troika, agrees to further talks", *Euractiv*, February 13, 2015, https://www.euractiv.com/section/euro-finance/news/tsipras-declares-death-of-troika-agrees-to-further-talks/ last accessed June 3, 2018.

[259] Cambrosio et al., 2006

[260] Jasanoff, 2005

remains to be seen, and we will see that this is has been challenging. Thus, this chapter argues that the difficulties that European objectivity encounters relate to the challenge of stabilizing discourses, practices and institutions that define objectivity in ways that articulate scientific evaluation and political negotiation instead of attempting to separate them.

In the following, I start by discussing the case of GMOs, a perfect illustration of the elusiveness of European objectivity. I connect this case with wider discussions about European expertise, and comment on the prolific academic literature about it as a sign of uneasiness about the sources of its legitimacy. This chapter will conclude on the need to explore in greater detail the sites where the problematization of European objects suggests paths for phrasing European objectivity in other terms than the view from nowhere.

European markets and a European voice for science

There are situations characterized by pervasive controversies about both the nature of European objects and the institutions granted with an authoritative voice to govern these objects. These situations articulate the organisation of European markets and the scientific evaluation of problematic technical entities. Genetically Modified Organisms (GMOs), and particularly GM crops and derived GM food products, are perfect illustrations of controversial would-be European objects. Whereas in the United States, GM products are dealt with by means of the same regulatory instruments as other products[261], Europe has treated them "as an object of specific regulation"[262]. Creating new regulatory categories for GMOs was meant to ensure that these objects were monitored by the European public administration. These new categories have been based on a technical and legal apparatus designed to make GMOs traceable across Europe. As such, GMOs might appear as another illustration of the extension of the European power to act through interventions on and by market objects. Traceability would thus make it possible to constitute a new market entity and a new market. European consumers could freely decide to take part or not in this market, thanks to the labelling of food products. Producers would also be able to choose whether or not to produce GMOs or alternatively to stick to conventional agriculture. Thus, the European regulation of GMOs introduced the objective of "coexistence", which would be

[261] Jasanoff, 2005
[262] Lezaun, 2006: 500

"a precondition for consumer choice" and ensure "the ability of farmers to make a practical choice between conventional, organic and genetically modified (GM) crop production"[263]. By turning consumers and producers into liberal agents, coexistence makes the choice of the preferred type of agriculture a prime objective. It is expected to occur within a regulatory framework managed by the European Food Safety Authority (EFSA), in charge of assessing GMOs and authorizing only the safe ones. By acting on market objects, and qualifying them by integrating new qualities (including "the fact of being genetically modified"), the European regulation would address policy concerns (here, the potential risks of GMOs) by harmonizing the European economic space. This ideal depiction of coexistence has faced numerous issues though. Far from yet another illustration of the European power to disentangle market objects, GMOs display the many issues that situations of scientific controversies raise. In the case of GMOs, these issues relate to: (1) the qualification of objects, (2) the ability to ensure the boundaries between "GM" and "non GM", and (3) the validity of European expertise. Let us consider these three points.

(1) When traceability is an objective, and especially when technological entities such as GMOs are concerned, it is not enough to introduce new legal concepts. "Bureaucratic nominalism" has to be completed by a vast chain of material operations needed to monitor these substances[264]. The stability of this chain has been contested, as well as the fact that it relies on information provided by private companies. The inherent technical challenges of tracking GMOs imply that even products considered "GM-free" could contain a certain percentage of GMOs[265]. In the European regulatory landscape, dealing with GMOs as would-be identified market entities for consumers to choose or not has resulted in a seemingly never-ending process of regulatory refinement. Javier Lezaun and Tanja Schneider put it in the following terms:

> *"The legally relevant definition of 'genetically modified' is continued and extended by a cascade of technical reports, guidance documents, and identification protocols produced by European regulatory bodies. The task of these texts is not so much to*

[263] Communication from the Commission to the Council and the European Parliament - Report on the implementation of national measures on the coexistence of genetically modified crops with conventional and organic farming {SEC(2006) 313} /* COM/2006/0104 final

[264] Lezaun, 2006

[265] This was discussed by Lezaun (2006) and has been a topic of concern for NGOs.

refine, let alone complete, the original description of the category, but rather to complement it with further qualifications that bring it closer to the world of physical objects. With the help of these qualifications, for instance, 'produced from GMOs' (…) has come to explicitly include yogurt fermented with the help of genetically modified lactic bacteria (if the micro-organisms are still detectable in the final product), but to exclude milk from cows fed on genetically modified crops or treated with transgenic medical products; to exclude honey produced by bees foraging on transgenic plants, but include honey that contains genetically modified pollen."[266]

It is only through a process of "endless qualification" that it is possible to control GMOs, authorize some and possibly ban others from the European market. In turn, this "endless qualification" constantly oscillates between an appeal to a consumer imagined as a rational, well-informer economic agent ready to choose the product she or he prefers, based on a well-designed label, and a gullible individual prone to misunderstanding the health impact of food products[267].

(2) The challenges to an expected transformation of GMOs into well-bounded market entities are also present at the level of their production. The objective of coexistence faces numerous challenges. One of them relates to the practical difficulties of isolating GMOs and preventing the contamination of GM-free areas, as a single bee can transfer genetic material and spread GMOs out[268]. The practical conduct of coexistence has resulted in a flurry of legislative production, the creation of dedicated institutions (including a "European Coexistence Bureau"), and several attempts at clarifying how it should be conducted[269]. These difficulties have given rise to two kinds of critics. Opponents of GMOs claim that contamination is inevitable and that GMOs would eventually spread throughout Europe at the expense of natural varieties[270]. Proponents, on the other hand, consider that the

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[266] Lezaun and Schneider, 2012: 373

[267] Lezaun and Schneider, 2012

[268] Lezaun, 2011

[269] The European regulatory production about coexistence comprises three Directives (2001/18/CE; 2002/53/CE; 2015/412), three regulations (1829/2003; 1830/2003; 834/2007), five Communications (COM(2004)415; COM(2006)104; COM(2009)153; COM(2011)204; COM(2015)176), one Decision "establishing a network group" for information exchange about coexistence (2005/463/CE), and one Recommendation (2010/C200/01). The European Parliament has published its own resolution on the topic.

[270] cf. Levidow and Boschert, 2008

practical difficulties of coexistence would make it impossible to implement, and would result in a *de facto* ban of GMOs[271].

(3) The difficulties do not end here though. Making such decisions as monitoring, authorizing or banning is not possible without European institutions able to provide scientific advice with enough of an authoritative voice. The European body in charge is now the European Food Safety Authority (EFSA), and its voice is less than authoritative. Years of disagreements between Member States and the European Commission about which GMOs, if any, could be allowed have led to a system that leaves the former with extensive leeway for adaptation. GMOs can be authorized by the European Food Safety Authority, and yet banned in Member States nonetheless, if they decide to use a safeguard clause. This possibility has resulted in a patchwork regulatory landscape, where certain GMOs are produced only in certain Member States. It has raised intricate legal issues about whether or not sub-national entities could also opt out from GMO production[272], and it has shown the impossibility of producing a unified scientific voice regarding GMOs across Europe.

Marked by the impossibility of stabilizing techno-legal definitions and of ensuring the legitimacy of the European institutions in charge of doing so, the GMO issue illustrates the elusiveness of European objectivity. There are two critical accounts of this situation. The first sees it as an imperfect outcome of a situation where political factors have undermined the possibility of producing consistent scientific expertise, resulting in regulatory fragmentation, growing scientific backwardness as compared to other places in the world where biotechnology thrives, and the continuous scepticism of the European public[273]. Such narrative of failure can be identified as experts wonder about how to ensure that future innovation will anticipate scientific and social controversies, and thereby avoid what they see as the troubled fate of biotechnology[274]. It sometimes prompts calls for a centralized expertise that would at last settle some of the issues. When then President of the Commission José-Manuel Barroso stated that "it should be possible to combine a Community authorization system, based on science, with freedom for Member States to

[271] Dobbs, 2011

[272] Dobbs, 2016

[273] This narrative is often supported by public opinion data originating from the Eurobarometer (Laurent, 2016)

[274] European Commission. (2013). Options for strengthening responsible research and innovation: Report of the expert group on the state of art in Europe on responsible research and innovation. KI-NA-25-766-EN-C.

decide whether or not they wish to cultivate GM crops on their territory"[275], he envisioned a situation in which European objectivity would at last be realized, even if Member States persisted in acting in contradiction with it.

It is at this point that a second narrative of failure has been articulated. It considers that the reference to science is used by the European institution to promote a style of expertise seeking to provide a single authoritative scientific voice, instead of considering science as inherently diverse, made of various social factors, and for which "pluralist expert advice for uncertainty-based regulation" could be required[276]. When they criticized the European regulation of GMOs and the role of the EFSA, STS scholars Brian Wynne and Fern Wickson considered the problematization of expert advice as a non-political source of knowledge for decision-making[277] and the impossibility to open the risk assessment of GMOs to political discussion as major flaws[278]. They saw the reference to science in this context as a "deception", pretending that a centralized expertise could settle issues that run deep into the technicalities of risk evaluation. This second narrative of failure is important, because it leads us to open up the dream of objectivity. Rather than calling for a purified science at last freed from political bias, one can envision another proposition for objectivity, which makes scientific expertise an explicit political operation, worthy of public deliberation and local adaptation.

The case of GMOs has many interests for our reflection. It provides an illustration of the difficulty in producing a European authoritative voice able to define and govern objects. While the ECB and the euro provide a telling illustration of the European ability to do so, and with significant consequences, the GMO case shows that answering this question is challenging in situations of scientific and social controversy. The European debates about GMOs also show that objectivity can be envisioned in different ways, and possibly as the outcome of explicit political processes. This latter point connects remarkably well with the practical organisation of technical expertise in the European institutions, which can hardly be described in the vocabulary of the view from nowhere, and where institutions meant to

[275] Quoted in (Wickson and Wynne, 2012)

[276] See Levidow and Carr, 2007; and Waterton and Wynne, 2004, about similar tension at the European Environmental Agency.

[277] One can interpret in those terms the fact that scientific argumentation is required by the EC in other examples of use as a safeguard clause for food products (Vos, 2000a: 236).

[278] Wickson and Wynne, 2012

be isolated from political considerations have been barely stable. To understand this, we can build on the important body of scholarship that has analysed expertise in European circles, as I will now discuss.

The hybrid nature of European expertise

By many respects, expertise is everywhere in Europe, and the rich scholarly literature on the subject bears witness to that. The conduct of European regulation has been characterized by the growing mobilization of scientific advice through committees expected to provide technical information and expertise, particularly in the health and safety sectors[279], while networks of experts based in national institutions routinely exchange information and thereby contribute to shaping European regulation[280]. Political scientists have produced detailed analysis of the composition of the European expert groups and the way they operate. They have talked about "technicization" or "depoliticization" to point to the mechanisms whereby large-scale policy issues are turned into matters of expert examination in groups that are, if not entirely secluded from public view, at least extremely difficult to access for members of non-governmental organisations or other civil society groups[281]. As these expert groups concur in producing the executive power of the European Commission at the expense – so their analyses show – of political discussions in institutions such as the European Parliament, national Parliaments, or within publicly held negotiation arenas, they might well contribute to the Union's democratic deficit and the prevalence of technocracy. In any case, the pervasiveness of expertise in European institutions "changes the nature of power", as Claudio Radaelli puts it, in that knowledge becomes both the instrument and the resource of policy intervention[282]. The pervasiveness of expertise is not independent of the dynamism of lobbying activities in Brussels. Many expert groups are also supposed to be platforms for negotiating with stakeholders[283]. Yet, rather than being publicly visible deliberative bodies, they are concentrations of unequal powers of influence, as shown by

[279] See: Demortain, 2009; Vos, 1997. The 1997 Amsterdam Treaty asked the Commission to "take as a base a high level of protection, taking account in particular of any new development based on scientific facts" in domains related to "health, safety, environmental protection and consumer protection" (Article 95(3)).

[280] Dehousse, 1997

[281] Robert, 2010; Radaelli, 1999

[282] Radaelli, 2017

[283] Saurugger, 2002

the numerous studies that have examined lobbying practices in Europe[284]. Even though expertise is everywhere in Europe, it does not usually result in a single authoritative voice originating from a well-defined expertise body. Rather, the production of expertise is distributed in many places, which also serve as loci for collective bargaining.

This dynamic has not been fundamentally transformed by the growing importance of the technical agencies that operate on behalf of the European Commission. The independence of the European Central Bank is unique in this respect, when compared with other EU agencies and authorities that have been created since the 1990s to provide scientific advice to the European institutions, above all the European Commission. Consider for instance the case of pharmaceutical products. They have constituted a traditionally difficult domain for market harmonization, already recognized as such in the 1985 White Paper on *Completing the Single Market*. Since then, there have been many attempts at harmonizing the pharmaceutical product market, especially since the "multi-state approach" in which each Member State authorizes medicines on its territory, and recognizes the decisions taken elsewhere by virtue of a principle of "mutual recognition", was deemed unsatisfactory for market harmonization[285]. These attempts have been undertaken by constituting a European agency for expertise on pharmaceuticals, the European Medicines Evaluation Products Agency (EMEA), created in 1995 and renamed European Medicines Agency (EMA) in 2004. In this case, harmonization has not been conducted as a sudden replacement of national expert bodies by a centralized European epistemic authority. Instead, the agency introduced a centralized procedure for the authorization of medicines that was focused on innovative products and did not aim to replace the whole range of activities undertaken by national expert bodies[286]. Accordingly, the European approach is primarily based on coordination[287], as Member States can still decide on the authorization of medicines, and EMA produces opinions which only become binding if Member States do not agree with the initial recommendation for market authorization[288].

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[284] See for instance, within a prolific literature: Coen, 1998; Coen and Richardson, 2009; Laurens, 2017.

[285] Orzack et al, 1992

[286] See "The centralized procedure", presentation of the European Medicines Agency, February 2010, available at http://www.ema.europa.eu/docs/en_GB/document_library/Presentation/2010/03/WC500074885.pdf , last accessed 22 September 2018.

[287] Groenleer, 2011; Orzack et al, 1992

[288] Permanand and Mossialos, 2005

The EMA is not the only European agency operating in such a distributed way. In the next chapter, we will encounter the European Chemicals Agency (ECHA). The work undertaken by the ECHA has been described, as the EMA could be, as an illustration of "epistemic subsidiarity"[289], that is, an institutional arrangement whereby the production of expertise is the outcome of carefully orchestrated exchanges between European and national sources of expertise. At the EMA, epistemic subsidiarity implies boundary work, not only between science and policy, but also between that which is discussed at European level, and that which remains within the scope of national policy choices. As the EMA was designed to collect, produce and use scientific knowledge, it was not meant to discuss health policy, including sensitive issues such as reimbursements where Member States retained their capacity for action[290].

As a distributed institutional construct, the EMA is not unusual in the landscape of European expertise agencies. The nature of the European agencies has interested some of the most famous scholars of European integration. Since the 1990s, they have discussed the form of regulation "by information" that they propose[291], how they are controlled[292], the way they appear out of networks of European experts and function in conjunction with them[293], and how certain institutional formats circulate from one technical domain to the next[294]. There would be little point in providing an exhaustive review of this rich research landscape. Here, I see the profusion of scholarly work about the institutional formats of European expertise as a sign of the uncertain nature of the articulation between technical advice and decision-making within the European institutions. This uncertainty extends beyond the agency format. It manifests itself in numerous controversies about seemingly arcane bureaucratic evolutions inside the European Commission. For instance, the relevance of the "science advisor" of the president of the European Commission, a position created in 2012 by José-Manuel Barroso, was intensely debated. NGOs have argued that this position added a layer of opacity to an already complex decision-process process, and, while allegedly aiming to ensure that European policy was "evidence-based", afforded industrial interests with a

[289] Jasanoff, 2013; Boullier, 2016
[290] Gardner, 1996; Gehring and Krapohl, 2007
[291] e.g. Majone, 1997
[292] e.g. Dehousse, 2008
[293] e.g. Borras et al., 2007; Chiti, 2000; Levi-Faur, 2011
[294] e.g. Demortain 2008

privileged access to the President of the Commission[295]. Others saw the NGOs' position as a mere reaction against the alleged pro-GMO position of Barroso's science advisor, Anne Glover[296]. Eventually, the position was scrapped by Jean-Claude Junker, to the dismay of science policy scholars who had hoped to turn it into a vehicle for renewed dialogue about the relationships between science and policy in Europe[297]. This episode is revelatory. It shows that if European expertise is based on an original institutional construct significantly re-defining the sources of objectivity, it faces profound instability.

Can European expertise be based on the view from nowhere?

As illustrated by the case of EMA, European expertise cannot be easily described in the vocabulary of the view from nowhere. The dream of an objective science at last freed from political interests has remained alluring though. This is partly a reaction to the issues originating from the pervasive uncertainty about the appropriate institutional format able to produce robust expertise, and the possibility of close relations between expertise and industry that follows[298]. The allure of the view from nowhere, and the difficulty of institutionalizing it in European agencies, is particularly visible in the case of the European Food Safety Authority (EFSA), the public body in charge of authorizing GMOs that I mentioned above.

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[295] Parr, 2015

[296] Chief scientist of Greenpeace, Doug Parr, challenged this interpretation (Parr, 2015)

[297] See a tribune written by science policy scholar James Wilsdon in *The Guardian*: "Juncker axes Europe's chief scientific adviser", *The Guardian*, 13 November 2014, https://www.theguardian.com/science/political-science/2014/nov/13/juncker-axes-europes-chief-scientific-adviser last accessed 3 June 2018. The debate about the position of Chief Scientific Adviser has been reported in a collective volume edited by Wilsdon and his colleagues (Wilsdon et al., 2015).

[298] This is particularly visible in the case of EMA (Permanand and Mossialos, 2005). Two opposite movements have been involved here, as the Agency tried not to exclude experts because of distant industry ties (see: "Medicines regulator amends conflict of interest rules to ensure suitability of experts", *The Pharmaceutical Journals*, 25 November 2014, https://www.pharmaceutical-journal.com/news-and-analysis/medicines-regulator-amends-conflict-of-interest-rules-to-ensure-suitability-of-experts/20067248.article last accessed 3 June 2018) while being criticized for providing confidential yet profitable "advice" to companies to help them produce development plans (see : "The EMA's scientific advice to pharma companies is a conflict of interest, says industry coalitions", *thepharmaletter*, July 15, 2014, https://www.thepharmaletter.com/article/the-ema-s-scientific-advice-to-pharma-companies-undermines-is-a-conflict-of-interest-says-industry-coalition last accessed June 3, 2018).

The EFSA was created in 2002 as an institutional response to the BSE ("mad cow") crisis[299]. The crisis had propelled long-ranging reflection about how the European Commission based its action on scientific fact, and how it used scientific expertise. The 2000 *White Paper on Food Safety* called for a European expert authority on food safety that could serve to prevent such crises as the mad cow scandal by ensuring that food products were properly assessed before circulating on the European market. The re-organisation of European expertise on food safety eventually finally led to the creation of the EFSA, a centralized European expert body to identify the safety of food products for consumption across Europe[300]. Thanks to the new agency, European decision-making would be isolated from the economic interests of particular Member States or private actors. In situations where some Member States were said to have influenced the delayed reaction to the BSE crisis[301], the EFSA committees would be composed of individual experts, rather than being based on national representation[302]. The EFSA, contrary to voices proclaiming the need for the agency to be granted regulatory power, was conceived as a public body whose power would be restricted to "risk assessment"[303]. In short, it was intended to be the locus of a renewed European objectivity on food safety, based on the ability to independently assess food products.

The objective of the new agency was to "restore trust" in the European institutions' ability to deal with technical risks. Restoring trust was expected to stem from the "strengthening of expertise and independence of scientific advice" and "the introduction of more transparency, consumer-oriented risk communication, and stakeholder involvement"[304]. These objectives connected with wider issues raised at the EC in the early 2000s, about "legitimacy and transparency"[305], and which were explicitly discussed in a 2001 *White Paper*

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[299] The discussions within the European Commission about a need for a food safety agency had been ongoing since the mid-1980s (Demortain, 2009)

[300] See: (Vos, 2000a). Before that, the European regulation of foodstuffs was only partially harmonized, through mutual recognition and comitology systems, and no centralized body existed (Kraphol, 2007).

[301] See a discussion in Kraphol, 2007 about the UK. The United Kingdom also contested the intervention of the European Commission at the European Court of Justice.

[302] See : (Levidow and Carr, 2007). The composition of the board, however, became strategic for Member States (Demortain, 2009).

[303] Demortain, 2009

[304] Dreyer and Renn, 2013

[305] Demortain, 2007, 2009; Dreyer and Renn, 2013

on Governance that became widely known[306]. Thus, the EFSA can be seen as part of the "governance" approach that the White Paper advocated, whereby independent scientific advice, transparency and stakeholder participation would ensure European decisions that were both scientifically sound and politically legitimate[307].

In 2011, Herbert Budka, Member and Vice-Chair of the EFSA's Panel on Biological Hazards (BIOHAZ), described the creation of the EFSA as a "spectacular success-story", and a prime example of European institution building[308]. However, Budka might be the only one who ever described the EFSA as a success. The Authority has been the topic of many debates, pertaining to the quality of the scientific advice it provides, the transparency of its functioning, and its independence from special interests. Criticisms have been voiced by NGOs[309] about its proximity to industrial interests. The value of the Authority's advice on GMOs has been heavily contested, as the standardized tests it used have themselves been controversial[310]. The GMO policy based on coexistence that I discussed above makes it possible for Member States to ignore EFSA's conclusions. If the EFSA's objective was to "restore trust", then it has barely been reached.

Several transformations were introduced at the EFSA in response to this situation. The Authority asked its experts to disclose their financial and institutional ties, and launched a "glass house" policy of opening scientific meetings to the public in 2012. It introduced a "stakeholder consultative platform" in 2005, tasked to "assist the Authority in developing its overall relations and policy with regard to 'civil society stakeholders'", and launched several "public consultations"[311]. This was consistent with a growing discourse of "democratization of expertise" adopted by the European Commission in the 2000s[312], but it did not free the EFSA from public controversies. Endocrine disruptors have been just one instance of a controversial issue about which the EFSA's contributions have been severely criticized by

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306 European Commission, 2001, *European Governance: A white paper*, COM(2001) 428

307 Klintman and Kronsell, 2010

308 Budka, 2011

309 See for instance: "Can EFSA ever cut ties with industry", *Foodnavigator*, 3 May 2017 https://www.foodnavigator.com/Article/2017/05/04/Analysis-Can-EFSA-ever-cut-ties-with-industry last accessed 3 June 2018. For an account of these criticisms that sees them as impetus for EFSA to maintain its scientific integrity, see (Kupferschmidt, 2012).

310 Demortain, 2013

311 Dreyer and Renn, 2013: 332

312 Moodie and Holst, 2014

environmental organisations[313]. Construed as an entity that could adjudicate controversies, the EFSA has itself become a topic of controversies.

The difficult construction of European expertise through agencies such as the EFSA is telling. It can be read as yet another example of contested science/policy boundary making in public institutions[314], rendered even more difficult by the dual objective of ensuring that science is purified from political discussion *and* is open to public participation[315]. EFSA might be an attempt to react to the plurality of expertise institutions in each European Member States, and the institutional response to a desire for centralized European expertise. But rather than providing a single authoritative voice able to ensure the legitimacy of European decisions, the EFSA has become perhaps the most visible illustration of the impossibility to stabilize European expertise in ways that could be described in the terms of the view from nowhere[316].

Alternatives?

The detour we took to the institutions of European expertise leads us to a problematic situation. Objectivity as defined in the terms of the view from nowhere remains an elusive dream, barely stable in the case of European Food Safety Authority, and possibly only approaching realization in that of the European Central Bank. In many other situations, technical expertise adopts more complex formats, which closely articulate the production of knowledge with the conduct of political negotiations, as in the case of the European Medicines Agency (EMA). In these cases, expertise is inherently tied to regulatory objectives on the one hand, and to the concerns and needs of the actors involved in its production on the other hand. If there is a European objectivity, it can be described as an "interested objectivity", which grounds both the production of technical advice and the representation

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313 Bozzini, 2017; Horel, 2016; see Chapter 6

314 Jasanoff, 1987

315 Studies of the European attempts at public participation in expertise have shown that the potential contradiction in this tension is often resolved by denying public participation the possibility to challenge the framing of what counts as "science" or what should be discussed in the first place (Wynne, 2006). The conflicted institutionalization of expertise at EFSA might also be related to the fact that boundary making has to be conducted inside the agency, which is in charge of risk assessment *and* risk management (Dreyer and Renn, 2013).

316 On the particularities of EFSA, as compared to other agencies such as EMA, see: Groenleer, 2011; Demortain, 2008; Permanand and Vos, 2008

interested parties, be they Member States or concerned stakeholders. The more complex formats where interested objectivity can be identified result in institutional uncertainty, and their sheer complexity make them difficult to comprehend, if not mechanically skewed for the benefit of the most skilled lobbyists.

We can now get back to the example of GMOs, with which I opened the discussion on European objectivity. Coexistence, as a principle of governing GMOs in Europe, can be situated within the wider context of the institutional format of the European expertise. It makes EFSA a central actor, but does not see it as a unique source of epistemic authority, hence the critical position of those who hoped to see the Authority as an adjudicator of scientific controversy. Coexistence also results in regulatory mechanisms whose complexity echoes that of European expertise more generally, and which often fail to take scientific uncertainty into account, as the critique formulated by STS scholars shows[317]. Thus, coexistence is a perfect illustration of the quandary in which European expertise is situated, caught between a pervasive reference to objectivity imagined as pure from political consideration, and actual practices that might re-define objectivity in the terms of interested objectivity, yet in ways that are not always made explicit, particularly to those with fewer resources.

This is because of these actual practices that coexistence also suggests that harmonization can be conducted in ways that are more subtle than the reference to the disentangled market or objectivity purified from political considerations. Michel Callon's account of the objective of coexistence for European GMOs offers a step in this direction[318]. Rather than an illustration of failed harmonization, or a consequence of failed political dialogue about biotechnology in Europe, Callon sees coexistence as a locus of collective exploration. He argues that it could provide a path towards "a programme of collective investigation and research, intended to design and test market arrangements articulating economics and politics in a new way"[319]. Callon's ability to turn innovation into a source of analytical and political intervention is evident here, as well as his faith in the possibility of opening up the construction of markets to democratic politics[320]. As coexistence implies the impossibility to

[317] See Levidow and Carr, 2007 ; Wickson and Wynne, 2012
[318] Callon, 2012a; Callon, 2012b
[319] Callon, 2015: 323
[320] Callon, 2017

contest the continuing development of GMOs in the first place, Callon's hopeful narrative of coexistence is not neutral. But neither are the accounts of biotechnology in Europe that see coexistence as a failure: they are used to argue for a closer market harmonization or for a radical redefinition of expertise[321]. Here, I want to use Callon's analysis of coexistence as an impetus to examine sites where science, policy and the market are articulated in ways that re-imagine disentanglement and objectivity, and where analytical and political possibilities of envisioning European harmonization in alternative ways can be found. As the previous considerations suggest, objects that give rise to sociotechnical controversies are prime choices to locate these sites. Accordingly, the following chapters will explore examples of European objects where interested objectivity is critically examined and experimented with. By discussing examples related to energy, chemicals, and environmental issues, we will consider original propositions for a European objectivity, which significantly differ from the view from nowhere, and also result in forms of harmonization that re-configure the dream of the disentangled market.

Some of the examples in the previous chapters can be discussed in those terms. Consider for instance the ways in which the protection of the geographical origins of food products make it possible to grant regulatory strength to the notion of *terroir*. Sociologist Geneviève Teil has contrasted what *terroir* implies about objectivity, with another definition of objectivity based on the mechanical description of passive entities[322]. She sees in *terroir* an "alternative objectivity", in that it cannot characterize food products independently from their processes of production. A wine will be from a particular *terroir*, labelled as such, and recognized as such by professionals and amateurs because of their intimate knowledge of the local conditions of production. But measuring what physical and chemical difference *terroir* makes is a tricky matter, which often produces uncertain results. In Teil's account, the objectivity required to turn objects into *terroir* products is indeed "alternative", since the expectations of scientists and regulators using scientific arguments about food products is that these objects can be described by physical characteristics through which differentiation is possible, irrespective of the conditions of (geographic) production. By contrast, *terroir*, and possibly the European interventions that turn *terroir* into a regulatory entity by protecting indications of geographical origin, implies that objects are differentiated according to their

[321] See Laurent, 2016 about the use of the narrative of failure of the European biotechnology.
[322] Teil, 2012

places of origin and processes of production and consumption. Understood in the vocabulary of *terroir*, food products are described not by measurable physical or chemical criteria, but by their connections with the economic and taste interests of local producers and consumers. *Terroir*, as it is included in the European regulation of geographical origin, might provide an additional path for a European objectivity defined in the terms of interested objectivity.

External pressures

At this stage, we start to envision that technical objects in need of scientific examination might provide an impetus to imagine harmonization in more nuanced terms that the all too simple dream of an objectivity purified from political concerns. Some of the examples we encountered so far, such as GMOs and pharmaceutical products, seem to point to an important price to pay, namely an institutional work that seems far from complete. This latter dimension prevents us from being naïve about the strength of alternative propositions for European objectivity. We should not think about interested objectivity in isolation, whether it originates from coexistence, *terroir*, or other domains of regulatory interventions. We need to question the institutional construct that could make interested objectivity possible, and the consequences it has for both the actors involved and the objects at stake. Nor should we ignore the external pressures that make it difficult to turn interested objectivity into institutionalized and well-recognized practices.

The example of *terroir* offers an illustration of the external pressures that any attempt at articulating a European objectivity has to face, for if *terroir* may indeed suggest that objectivity can be phrased in other terms than the view from nowhere, this has not been consensual in international settings. Non-European countries have been critical of the European protection of geographic origin, and scholars have talked about the "war on *terroir*" to describe the opposition to the European protection of local products[323]. At the World Trade Organisation (WTO), the United States have argued that European PDOs and PGIs were intended primarily to protect the European market against external producers. On the European side, the protection of origin has been described as a way of informing the

[323] Josling, 2006; see also Charlier, 2007

consumer and ensuring the validity of quality labels for food products, by inserting local characteristics in the regulatory description of such products[324]. The opposition between critics and proponents of *terroir* has cultural and economic dimensions. At the WTO, this opposition was also based on scientific arguments, as critics of the European regulation questioned the objective difference of local food products from equivalents produced elsewhere. In this critical position, "objectivity" had nothing to do with the interested objectivity that *terroir* proposes. Rather, it was about differentiating food products according to well-defined physical and chemical criteria.

This conflict of objectivity was eventually resolved through a compromise. In 2005, the WTO settlement established that the European regulation discriminated against Australian and US producers, although it was said to be "essentially compatible" with WTO rules. The regulation eventually had to be clarified to allow non-European actors to apply to the Commission for registration[325]; in other words, the European system of protection opened itself to third party countries[326]. But in other cases, the European position failed to convince the WTO of its scientific grounds. This has been the case of GMOs, as the bans on certain GMOs introduced into Europe were contested at the WTO by Argentina, Canada and the United States[327]. The opponents of the European regulation considered that the evaluation of risks should be the product of a universal science expected to serve as a reference in international trade conflicts. They claimed that the European ban was based on a lack of scientific evidence[328] and was nothing but a political move intended solely to protect the interests of European farmers, at the expense of international trade. As in the war on *terroir*, one can regard the opposition less as a confrontation between scientific arguments and a political position, than as one between two ways of defining what counts as evidence and how to make decisions in situations of uncertainty. Thus, the opposition about GMOs at the WTO can be seen as yet another conflict of objectivity. As STS scholars have shown, the challengers of the European ban imagined objectivity as the outcome of mechanistic processes able to eliminate uncertainty and to stabilize a technical assessment of risks freed

[324] Josling, 2006: 360
[325] Handler, 2006
[326] As regulations 692/2003 and 510/2006 did (Sylvander et al., 2007; Becker and Staus, 2009)
[327] Winickoff et al., 2005
[328] Josling, 2015

from political considerations[329]. By contrast, the European ban could also be framed in the terms of interest objectivity, as an attempt to deal with pervasive uncertainties about both the scientific evaluation of GMOs and the social expectations about them. That Argentina, Canada, and the United States won their case against Europe is a sign that this framing failed to be articulated in convincing ways.

The international pressure to adapt to a standard of proof that implicitly adopts a definition of objectivity at odds with European policies has been a pervasive trope in biotechnology regulation. Some cases have shown that the European institutions sometimes adapt to this pressure. Consider for instance the international challenges to the European bans of recombinant growth bovine hormone (rGBH), as they have been analysed by sociologists Daniel Kleinman and Abby Kinchy[330]. A first ban on recombinant growth hormone passed in 1995; then the European Council passed a series of moratoria, eventually banning rGBH permanently in January 2000. The initial arguments for this reluctance to introduce rGBH on the European market had much to do with the economic situation of farmers. In 1990, the European Commission and the Council had considered that it needed time to review the situation, considering that "products arising from milk production occupy a very important place in the Community… an essential source of income for part of the agricultural population"[331]. The effect of increased productivity on the price stability of agricultural products was then an important concern[332]. But the persistent challenges to the European regulation at the WTO resulted in changes in the European rationale for banning rGBH. The 1994 extension of the moratorium used scientific arguments about animal welfare as justification. In 1999, the ban was said to be "exclusively motivated by reasons of animal welfare and health", which were then described as "ostensibly objective, scientific concerns"[333]. The pressure from the WTO made the European regulation frame its interventions in terms that could be construed as scientific ("animal welfare") and could not

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329 Winickoff et al., 2005. This was aligned with the American civic epistemology (Jasanoff, 2005).

330 Kinchy and Kleinman, 2003

331 Council decision of 25 April 1990 concerning the administration of Bovine Somatotrophin (BST), 90/218/EEC

332 Later, the EC worried about "some aspects of consistency with other community policies", namely the concern that the commercialization of rGBH might contradict the mandate to protect the existing structure of agriculture as embodied in the Common Agricultural Policy (Kinchy and Kleinman, 2003).

333 Kinchy and Kleinman, 2003: 584

be criticized as motivated by considerations related to the political economy of European agriculture.

At the WTO, international pressure forced Europe to adopt scientific arguments, as the organisation required "sufficient scientific evidence" to accept regulatory measures[334]. In some cases (as the rGBH), European institutions adopt the language expected by the international organisation. In others (such as GMOs), they fail both to adapt to external pressures and to articulate alternatives that would convince international audiences that European can build an objective voice of its own.

Conclusion: is another objectivity possible?

This chapter has looked at cases – of which GMOs might be a prime example – in which scientific objectivity is explicitly sought after. These cases show that problematizing European objects as entities in need of a scientific assessment conducted by a centralized European epistemic authority is highly problematic. While reference to the market provides precious resources for harmonization (as the previous chapters have shown), science is a more complex matter. The pervasive problem of the institutional format that European expertise is supposed to take can be rephrased accordingly. The rich empirical and theoretical explorations of political scientists and European scholars have shown the variety of the agency format and the uncertain constitutional role of expertise in Europe. This situation is a sign that European objects for which scientific expertise is required might give rise to propositions for European objectivity that do not phrase it in the terms of the "view from nowhere" but can instead be described as manifestations of an "interested objectivity". Interested objectivity sees objects as explicit political entities, and consequently closely articulates scientific evaluations and political negotiations.

Perhaps because of its originality, this latter approach faces pervasive instabilities, and is regularly confronted with the persistent allure of the view from nowhere, as the example of

[334] The growing role of scientific argumentation at the WTO can be related to the Agreement on the Application of Sanitary and Phytosanitary Measures which states that any regulatory decision on these products should be "based on scientific principles and is not maintained without sufficient scientific evidence" (Article 2(2) of the Agreement, discussed in Majone, 2002; Winickoff et al., 2005).

EFSA shows. There are two potential readings of this situation. The first one diagnoses a persistent failure to ensure that a true European expertise can convince member states, and possibly the European public at large, of its value. It sees a need for yet other attempts at stabilizing a centralized body of European expertise, which at last would be able to provide a unified voice of science. The second reading also identifies a failure, although not in the same terms. Often inspired by STS, it sees the processes that I described as manifestations of interested objectivity as ways of recognizing that the production of expert advice is a scientific and political process, yet not always explicitly described as such. In this reading, the specificities of European expertise are not to be erased, but further cultivated. If there is a failure, it is related to the inability to publicly describe expertise in specific European terms, in ways that would convince international audiences (for instance at the WTO) and European ones that it can be scientifically robust and politically legitimate. At this point, the failure of EFSA to provide a European view from nowhere is a forceful reminder of the limited value of calling for an unproblematized "objective expertise" to solve the issues faced by European expertise. By contrast, what the instability of European expertise and its contestations in international settings make visible is the dual necessity of an analytical repertoire and institutional support to ensure the scientific and political robustness of interested objectivity.

The following chapters will extend this reflection by studying European objects for which the production of European objectivity has been challenging. It remains to be seen whether these challenges can offer paths for grounding interested objectivity, and possibly offering alternative types of harmonization. If so, whether or not these paths are made explicit and used as sources for re-imagining the dreams of the disentangled market and purified science will be yet another question to examine.

Chapter 6. Regulatory precaution

The precautionary principle was enshrined in the 1992 Maastricht Treaty, and has been mentioned in numerous European regulations since then. It has been the topic of many academic and policy debates, pertaining to both its practical consequences and its philosophical underpinnings. Some analysts, close to industry circles, consider the use of precaution within European institutions to be "arbitrary and capricious"[335]. Others see it as the signal of a turnaround by European institutions, which they claim have become more sensitive to risk management than their American counterparts[336]. The fact that these debates were never concluded can be connected to the pervasive issue of European objectivity. The precautionary principle challenges the ways in which policy action can and should use scientific knowledge to control potential risks. It necessarily relies on an epistemic authority – the very authority that has been particularly problematic in Europe, as we saw in Chapter 5. As the European Commission itself has explicitly shown, the precautionary principle implies a redefinition of the relations between science and policy making in European institutions[337]. Accordingly, it has been described both by the European Commission and by scholars of public expertise as a middle-ground position. In the language of the Commission it is seen as “a basis for action when science is unable to give a clear answer”[338], and possibly as a path towards rethinking the ways in which public facts are crafted[339].

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335 Marchant et Mossman, 2004

336 Vogel, 2012

337 European Commission, 2000, Communication from the Commission on the Precautionary Principle, COM(2000)1; See Dratwa, 2002

338 European Commission, 2000 Communication from the Commission on the Precautionary Principle, COM(2000)1.

339 Jasanoff, 2017

In this chapter, I discuss the practical consequences of precaution for the problematization of European objects and European intervention. I focus on a problematic set of European objects, namely chemicals[340]. Chemicals constitute a large domain of industrial and regulatory activity in Europe, and a problematic one. How can the sufficient safety of chemicals be ensured? How to identify and ban the most hazardous ones? Answers to these questions have been controversial, as some lament the burden of strong regulatory measures, while others see a persistent inability to ban hazardous substances. The stakes are high for the actors involved, as the intense lobbying activities around European chemical policy amply attest. The main element of the European regulation of chemicals came into force in 2006. Called the "REACH" regulation (Registration, Evaluation and Authorization of Chemicals), it was said to have "generated one of the bitterest and most expensive lobbying campaigns the European establishment in Brussels has ever seen", as an article in the *New York Times* reported at the time[341]. Companies feared the increased costs of additional tests to perform, while NGOs saw opportunities for developing more constraining regulations. Since then, the European regulation of chemicals has had important effects on industrial actors, who have had to perform numerous additional tests, and have seen some substances eliminated from the European market. In some cases, the European interventions on chemicals consist in turning chemicals into market entities allowed for circulation in ways designed to limit their risks (I discuss these cases in the first section of this chapter). In others, they exclude chemicals from the market (I discuss these in the second section of this chapter).

How to introduce meaningful regulatory categories, able to describe the chemicals at stake and provide relevant channels for policy interventions? This chapter will analyse a dominant answer to this question. This answer consists in conducting a case-by-case examination of various chemicals and their uses, with the hope that the precautionary principle will then be incorporated into regulatory work. In doing so, it manipulates the regulatory constraints with great care. I call this approach "regulatory precaution", to point to a dual dimension: being precautionary about the risks of the substances, and being precautionary about the use of regulatory constraints. As regulatory precaution relates to the definition of the

[340] The multiple references to the "precautionary principle" in European legislation have been reviewed in (de Sadeleer, 2001; Tosun, 2013). Its use in European Courts has been discussed in (Stokes, 2008).
[341] "Chemicals: a tale of fear and lobbying", *International Herald Tribune*, 27 October 2006.

chemicals themselves, and to the appropriate expertise needed to feed a would-be legitimate legal action, we will see that it can be seen as an alternative proposition for European objectivity, and an illustration of what the previous chapter labelled "interested objectivity". This proposition makes the problematization of technical objects a joint scientific and political operation. This chapter will demonstrate that this approach is not consensual. The pervasive difficulties that regulatory precaution encounters reveal both the existence of potential paths for considering chemicals as political objects worthy of collective examination, and the weakness of the institutional apparatus in charge of conducting this examination.

Turning chemicals into European market objects

A regulation for making a market

Where are chemicals dealt with in European regulation? The specific piece of European legislation dealing with chemicals is the REACH regulation (for Registration, Evaluation, Authorization and Restriction of Chemicals). Heralded, when it was released in 2006, as "the most ambitious piece of European legislation", and "the largest single reform of market regulation undertaken to date"[342], REACH introduced legal processes that each company producing or using chemicals had to follow. The regulation stated that its provisions were "underpinned by the precautionary principle"[343]. While explicit reference to the principle was criticized by actors close to the industry[344], it was also met with scepticism by critics who considered that REACH failed to act against the interests of industrial actors in situations of scientific uncertainty about potential risks[345]. These contrasting criticisms saw the REACH regulation as a policy instrument with problematic relations with the European chemicals market: the former considered that the regulation was too restrictive, while the latter maintained that it failed in significant ways to act against risks. Both saw the REACH regulation as an instrument acting *on* the European chemicals market.

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342 Kjaer, 2007: 1
343 Chap. 1, Article 1(3)
344 Marchant and Mossman, 2004
345 Hansen et al., 2007

This reading works relatively well for a range of provisions of the REACH regulation, namely the processes through which substances are supposed to be excluded from the European market. Before I come back to these processes in the second section of this chapter, it is important to note that the main thrust of the REACH regulation might however be better described as a device meant to organise the market, primarily by stating the characteristics that all chemicals need to follow to be granted the ability to circulate throughout Europe. REACH, for that matter, is less an intervention *on* a pre-existing market, than a tool for *constituting* a European chemicals market, where well-defined objects are expected to be exchanged by well-informed economic agents. In doing so, the objective of REACH is similar to that of other pieces of regulation also impacting chemicals, such as the cosmetic regulation[346], the biocide regulation[347], or the novel food directive[348]. All these texts seek to characterize economic objects for circulation on the European market. They share an objective of harmonization through the organisation of the European chemicals market.

Within REACH, this objective is implemented through a regulatory process known as "registration". To register a substance, companies need to submit "dossiers" to the European Chemical Agency (ECHA), created to implement the REACH regulation[349]. The dossiers contain technical information describing the substance and its properties, and a "chemical safety report", including "a detailed summary of information on the environmental and human health hazard properties of the substance, together with an assessment of exposure and risk where such an assessment is required"[350]. The principle underpinning the procedure is "no data, no market", meaning that the public bodies need to be provided with data before granting authorization for a given substance to circulate on the European market.

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[346] Regulation (EC) No 1223/2009 of the European Parliament and of the Council of 30 November 2009 on cosmetic products

[347] Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products

[348] Regulation (EU) 2015/2283 of the European Parliament and of the Council of 25 November 2015 on novel foods.

[349] For certain substances the registration dates differ, depending on the quantities concerned. The substances "benefiting from a transitory regime" are those that were already being produced on the European market as at 1 May 2004, or that are listed in the inventory of chemical substances existing on the Community market. For substances not benefiting from the transitory regime, the manufacturer has to supply a technical file containing information on the substance's identity, production and use, as well as a report on its chemical safety.

[350] "The registration dossier", ECHA website: https://echa.europa.eu/regulations/reach/substance-registration/the-registration-dossier, last accessed 9 August 2018.

The registration process supposes that regulatory categories are used to define which chemicals need new dossiers, and which can be grouped together and thereby considered identical from the regulatory viewpoint. The stakes are high for industrial companies. They might be tempted to group together various substances under a single general heading (e.g. carbon nanotubes under a more general "carbon" category) to minimize the testing and administrative costs of adding new dossiers. Accordingly, many of the debates about registration in REACH have dealt with the extent to which companies could consider that different substances were in fact "the same" and could therefore be registered under the same dossier. Those debates display the inner politics of category making at the heart of the registration procedure. This politics relates to the conflicting views of, on the one hand, regulators in charge of ensuring that the risks of chemicals are known, and, on the other hand, companies defending their economic interests in arguing for or against new regulatory categories for the chemicals they produce. The politics of category making extends beyond a clash of conflicting interests though; it is tied to the materiality of chemicals and the very logic of industrial innovation. As historian and philosopher of science Bernadette Bensaude-Vincent puts it, chemistry is an "impure science", constantly associating expected new properties and emerging characteristics of the substances at stake[351]. In industrial contexts, this means that companies are permanently in search for new properties and ceaselessly produce new substances only known by these properties. Chemicals proliferate as companies tinker with their production processes to come up with new properties, and might not even be aware of the ways in which their inner characteristics are "different" from already known substances.

The European Chemicals Agency (ECHA) produces guideline documents to help companies and regulators in the writing and evaluating of dossiers. These documents mention the various criteria that can be used to identify a substance, such as atomic composition or crystalline structure, but the stated criteria might not be enough to decide on problematic situations. The remainder of this section will discuss one of these situations, namely nanomaterials. This case will provide an illustration of the politics of category making as chemicals are expected to be turned into European market objects. It will help us identify a

[351] Bensaude-Vincent and Simon, 2008

problematization of European objects based on a case-by-case analysis of proliferating regulatory categories

Making regulatory categories on a case-by-case basis

Broadly speaking, nanomaterials cover the set of substances that acquire new properties because of the small size of their components. For instance, the optical properties of titanium dioxide at the nanoscale makes it attractive to companies developing cosmetics, the biocide properties of silver nanoparticles have been used by the food industry as additives to packaging, and carbon nanotubes have become regularly used in various construction materials. The enhanced properties of nanomaterials have raised questions regarding potential toxicological effects, which would differ from the non-nano counterparts of nanomaterials.

While widely used, the label "nanomaterials" is itself problematic. The International Standardization Organisation (ISO) defines them as "materials with any external dimension in the nanoscale or having internal structure or surface structure in the nanoscale", nanoscale being the "size range from approximately 1 nm to 100 nm"[352]. This definition was the outcome of lengthy negotiations at the international standardization body, which eventually resulted in a definition intended to be "scientific", leaving any regulatory considerations to sovereign states[353]. "Scientific", here, points to a conventional choice, linking the fact of being "nano" with the approximate scale of the entities concerned, independently of the properties for which these entities are developed in the first place. This makes the ISO definition of little use for regulatory purposes[354].

Whether or not to create a new regulatory category for nanomaterials has been a sensitive issue in Europe. In 2008, the European Commission had stated that no new "nano" object category should be created in European law, and that it would suffice to apply REACH to

[352] ISO/TS 80004-1:2010 Nanotechnologies—Vocabulary—Part 1: Core terms

[353] Laurent, 2017

[354] The ISO standard uses the term "approximately", which would introduce legal uncertainty in regulatory contexts. Another issue stems from the fact that the ISO definition does not differentiate between manufactured nanomaterials and naturally occurring ones, meaning that any regulation using the ISO definition would also target particles emitted by volcanoes.

nanomaterials[355]. The Commission considered that a "case by case" approach had to be adopted, in which the registration of nanomaterials would be considered no differently from that of any other substance. The "case by case" approach consists in examining, for each substance at the nanoscale, whether it can be identified with an existing substance or whether it should be registered separately as a new entity. For instance, whether or not nanoscale titanium dioxide is equivalent as regular titanium dioxide and does not require a new dossier, or whether silver nanoparticles are equivalent to silver particles, would then be examined.

In practice, the task of officials at the European Chemical Agency (ECHA) in charge of evaluating registration dossiers and implementing this case-by-case approach is not easy. During an interview, an official at ECHA in charge of the implementation of REACH for nanomaterials illustrated the quandary in which he was caught with the case of titanium dioxide. He described titanium dioxide as "the perfect example" of the problem posed by the identification of nanomaterials[356]. He needed to know whether titanium dioxide at the nanoscale was different from regular titanium dioxide, and indeed what “different” meant. The guidance documents produced by ECHA to help companies and regulators write and evaluate dossiers were of little help for him. These documents mention the various criteria that can be used to identify a substance, such as atomic composition or crystalline structure, and size is not one of these criteria. So the official wondered whether he should take risk-related properties (such as specific surface area) into account to differentiate between titanium dioxide at the nanoscale and regular titanium dioxide.

The difficulties encountered by the ECHA official with titanium dioxide, as with other nanomaterials, were a topic of concern within the European institutions. The “REACH Implementation Projects” were launched to answer these concerns, by "ensuring that all the stakeholders, especially companies and public authorities, are adequately prepared for the practical application of REACH"[357]. Some of these implementation projects were devoted to nanomaterials, and to working out how to register them. They examined, for instance,

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[355] European Commission, Communication of 17 June 2008, " Regulatory aspects of nanomaterials" (COM(2008)0366)

[356] Phone interview, June 2012.

[357] http://ec.europa.eu/environment/chemicals/reach/preparing/, presentation of the REACH Implementation Projects

whether carbon nanotubes or titanium dioxide should be registered in separate dossiers, or could be considered “the same” as other carbon forms or titanium dioxides.

These distinctions, however, were only a first step, since many carbon nanotubes and many titanium dioxides could potentially be differentiated from one another. There is for instance an infinite variety of carbon nanotubes: they can be flexible or rigid, with a double or multiple inner wall, with differing lengths, and so on. All these differences influence the risk profile. Practical difficulties therefore arise in determining whether a given nanotube has to be registered separately or whether it can be registered with others. This is an issue that companies wonder about when they produce many nanotubes for diverse industrial applications, with variable physico-chemical characteristics[358]. The conclusions of the REACH implementation projects were submitted in 2012. They reflected the difficulty of identifying relevant differentiation criteria: “no consensus” was reached on the identification of a set of nanometric equivalents for known chemical substances (silver, calcium carbonate, and titanium dioxide)[359]. Although the projects concluded that carbon nanotubes should be registered as such, they were inconclusive when it came to potential differences among carbon nanotubes[360].

The politics of the case-by-case approach

The example of nanomaterials is a telling illustration of the case-by-case approach that is at the core of the European regulation of chemicals. The case-by-case approach means that the European expert bodies engage in an endless examination of various substances. This examination is conducted by multiple working groups in which various stakeholders, including experts from Member States and private companies, are involved. Nanomaterials are thus an almost perfect manifestation of the “politics of uncertainty” at the heart of the European regulation of chemicals[361]. Uncertainty about the technical characteristics of substances and about the interests of stakeholders is dealt with through collective discussions between national and European, public and private experts. Expertise is not

358 Interview with a "nanotubes" project manager at a French chemicals company, October 2009.

359 "REACH Implementation Project on Nanomaterials", concluding remarks.

360 "REACH Implementation Project on Nanomaterials", concluding remarks.

361 Jouzel and Lascoumes, 2011

expected to be the outcome of a single centralized European body (as ECHA could be), but it acquires its European character because it stems from this collective work.

The particularities of the European regulation of chemicals can be better understood when compared with the situation in the United States. There, the regulation of chemicals is characterized by the importance of science-based expertise, as agencies such as the Environmental Protection Agency and the Food and Drug Administration are asked to provide technical assessments of substances[362]. The fact that public bodies in the US need to demonstrate hazards before introducing restrictions affecting companies has spurred lengthy debates about whether or not bias were present. The European approach to the expertise on chemicals is significantly different. First, ECHA is less a centralized body of expertise than a coordinator in charge of gathering information from both industrial companies and Member States. A major change introduced in REACH was that the onus of proof was henceforth on companies, which had to demonstrate the safety of their substances. The European agency's role was then only to monitor the process and validate the demonstration. The coordination role of ECHA also manifests itself when considering the numerous interactions between Member States' "competent authorities" and the European level. This situation has been described as "epistemic subsidiarity" to highlight the fact that the production of knowledge, less than centralized in a unique European body of expertise, is distributed across Member States[363]. Second, the mode of intervention in the US regulatory system articulates the pervasive reference to science as the outcome of a "view from nowhere", with regular recourse to the courts. By contrast, rather than delegating the manufacture of expertise to a centralized provider of a "view from nowhere", REACH distributes the participation in knowledge production across a wide range of actors. This is why REACH has been described as a "hybrid" instrument of governance, or an illustration of the "experimental governance" that the European approach to regulation is said to be[364].

These terms are used by political scientists to point to the fact that roles and responsibilities are distributed between European institutions, Member States, and private actors; that collective negotiations are preferred to direct "command-and-control" approaches to regulation; and that regulatory decisions are considered open to revision. In practice, this

[362] Jasanoff 1990
[363] Boullier, 2015; Jasanoff, 2013
[364] Sabel and Zeitlin, 2015

means that chemicals are discussed in expert groups, which, in problematic situations such as that of nanomaterials, are multiplied for each of the "cases". The discussions that are then undertaken in these arenas cause regulatory categories (i.e. the various "cases" of the case-by-case approach) to proliferate, since each new registration might lead to a new "case", and new technical explorations. Moreover, the arenas of collective discussion also proliferate, which impacts the possibility of the actors involved to gain access to information or to mobilize enough resources to participate in a growing numbers of discussion groups. The proliferation of cases has a politics, in the sense that not every actor can navigate this complex regulatory landscape. It goes hand in hand with a problematization of European objects as issues of ongoing collective evaluation of uncertainty, bound to a state of perpetual refinement.

Among the actors involved, the ECHA officials play a crucial role, but a difficult one that depends on the information provided by the companies seeking registration. The example of nanomaterials provides telling illustrations of the consequences of the politics of uncertainty at the heart of the European regulation of chemicals. For instance, the ECHA has been trying to ask companies for information on the "nano" characteristics of the substances they produce, and this request has been controversial. Some industries challenged a decision taken in 2014 by the ECHA, which had asked companies registering titanium dioxide "to submit information related to phases, nanoforms and surface treatment of nanoforms" – all elements that can be used to differentiate among various "cases" of titanium dioxide. The ECHA Board of Appeal annulled the ECHA decision on the grounds that the agency could not interpret REACH's annex to ask companies for information about "nano" characteristics[365]. ECHA's reaction was not positive:

> *If the scope of the registration cannot be clarified, then the potential data gaps cannot properly be assessed and the basic hazard data cannot be effectively requested. (…) In the current situation ECHA cannot effectively and systematically verify whether safe use of nanomaterials in the supply chain is demonstrated, and whether additional regulatory risk management measures are needed.*[366]

[365] Decision of the Board of Appeal of the European Chemicals Agency, 2 March 2017, A-011-2014.

[366] ECHA, 2017, ECHA strategy on substances in nanoforms, 48th Meeting of the Management Board 14-15 December 2017, MB/57/2017 final Brussels, 15.12.2017: 2-3.

This resigned statement might be the latest illustration of the difficulties of the case-by-case approach. Faced with the proliferation of cases, ECHA needs an endless flow of technical information that it struggles to gather as it lacks the legal strength to do so.

The consequences of the case-by-case approach

Rather than neatly disentangling European objects, the case-by-case approach causes regulatory categories and arenas of collective discussion to proliferate. What this proliferation entails is visible when considering the reactions to it. Again, nanomaterials offer a telling illustration. The case-by-case approach has been criticized by the Brussels-based European Environmental Bureau (EEB), to which various European environmental organisations belong. The EEB has called for a broad new category for nanomaterials[367] – in its view the only way to adequately regulate them. This request has also come from Member States. In 2012, France became the first country in the world to introduce a mandatory declaration of nanomaterials for companies operating on its territory[368]. It introduced the term "substances in a nanoparticulate state" to denote materials that have the ability to disperse nanoparticles in the environment[369]. As it introduced this definition, the French public administration tried to connect the definition of materials with potential negative effects on the environment. This was the rationale in including in the definition all the materials that could release nanoparticles in the environment.

The French initiative regarding nanomaterial regulations provides an alternative to the case by case approach, and was explicitly conceived in opposition to the choices made by the European Commission. The new general legal category, the "substances in a nanoparticle state", was conceived as a proxy for gathering knowledge about potentially hazardous

[367] The positions of the European Environmental Bureau are presented in a position paper, the "EEB Position Paper on Nanotechnologies and Nanomaterials: Small scale, big promises, divisive messages" (February 2009). They were described to me in two interviews and during a one-day meeting that I observed in November 2010.

[368] Decree no. 2012-232 of 17 February 2012 on the annual declaration on substances at nanoscale in application of Article R. 523-4 of the Environment code

[369] As it did so, France took inspiration from a 2011 *Communication*, a text published by the European Commission that does not introduce any legal constraint.

nanomaterials. This category was severely criticized. Scientists and jurists claimed that it failed to adequately standardize instruments for reliably measuring the criteria defining these "substances in a nanoparticle state"[370]. The criticism was similar to that of the toxicologists engaged in the control of nanomaterial risks, who advocated "not defining nanomaterials", for fear of having to create a new category based on decisions that they deemed to be "not scientifically valid"[371]. For the officials involved, the initiative was a (new) way of dealing with uncertainty, which introduced a category targeting the nanomaterials "likely to emit potentially dangerous nanoparticles"[372] (hence the term "nanoparticle state"). These officials recognized that the category was partly arbitrary and that its technical stability was not guaranteed. But they considered that it allowed for action to be taken "in a situation where the government has to know what industry is doing", as an official told me during an interview[373]. Following France's explicit positioning in favour of specific regulations applying to nanomaterials in REACH[374], the French "substances in a nanoparticle state" initiative was designed as a demonstration to the European institutions of the possibility to introduce a new definition of nanomaterials within REACH – what a French Minister of Ecology called a "nano patch"[375].

The European Parliament also disagreed with the Commission about nanomaterials. In response to the Commission's assertion that existing regulations were valid for nanomaterials, the Parliament stated that:

> *(The Parliament) does not agree (…) with the Commission's conclusions a) that current legislation covers in principle the relevant risks relating to nanomaterials, and b) that the protection of health, safety and the environment needs mostly to be enhanced by improving implementation of current legislation.*[376]

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370 Lacour, 2012

371 Maynard, 2011

372 Excerpt of an interview, Head of the Chemical Substances Bureau at the French Ministry of Ecology, February 2013.

373 *Ibid.*

374 Despite the diversity of the national administrative actors, the French position on the application of REACH to nanomaterials was constant and was always in favour of considering these objects as new substances (interview with the head of the Agency, Directorate General for Health, October 2010).

375 Interview, head of the Chemical Substances Agency, February 2013.

376 European Parliament resolution of 24 April 2009 on regulatory aspects of nanomaterials (2008/2208(INI)): 9

Following this line, Parliament undertook a series of legislative initiatives to produce new regulatory categories for nanomaterials in the European legislation. These initiatives were undertaken in fields not covered by REACH, notably biocides, food, and cosmetics[377]. During the revision of regulations on cosmetics, new foods and biocides, European MPs added amendments requiring specific measures for nanomaterials. An amendment was added to the "cosmetics" regulations, for example, requiring companies to mention "nano" in the list of ingredients of products containing nanomaterials[378]. The amendment defined them as follows:

> *'nanomaterial' means an insoluble or biopersistent and intentionally manufactured material with one or more external dimensions, or an internal structure, on the scale from 1 to 100 nm[379].*

This category was intended to cover substances of which the "nano" dimension implied risks that had to be regulated; hence the qualifiers such as "insoluble" and "biopersistent". But this definition was also partly arbitrary. The size limit ("between 1 and 100 nm") directly echoed the ISO definition[380]. It made it possible to target a set of very small substances potentially containing new properties, but was not a threshold beneath which new risks were systematically expected to appear. In the New Foods regulation and the Biocides directive, the definitions introduced by Parliament were more complex, and based on criteria containing, *inter alia*, specific surface area and distribution sizes. The successive definitions that the members of the European Parliament introduced can be read as a gradual approximation of the mechanisms that impact the properties of nanomaterials related to health and environmental effects.

As in the case of the French initiative, the stability of the categories created by Parliament is not guaranteed. The technical infrastructure to ensure the robustness of the measures is lacking and the possibilities of control are uncertain. But here too, the opposition to the Commission's initiatives enables us to characterize, by contrast, the drivers of the case-by-case approach which uses regulations as a precautionary measure while manipulating the

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[377] REACH is not applicable to these sectors because they fall under other regulations (REACH, Title I, Chap.. 1, Art.2 (5); REACH, Title I, Chap.. 1, Art.2 (6)).

[378] Regulation (EC) No 1223/2009 of the European Parliament and of the Council of 30 November 2009 on cosmetic products

[379] *Ibid* : Art. 2.1, Paragraph k.

[380] See above. It also eliminated the adverb "approximately" for legal reasons.

regulatory constraint with precaution. The alternative proposed by France and the European Parliament consists in using the law as a tool for creating technical categories, if necessary arbitrary ones, and imposing them on industry.

Regulatory precaution

The case-by-case approach implies that one explores the infinite variety of descriptors of substances, and the infinite variety of exposure scenarios. The example of nanomaterials is particularly telling at this point, and is an illustration of a problematization of European objects in the language of the precautionary principle. The approach undertaken is precautionary in that it requires the relentless exploration of uncertainties in various collective settings. Yet it is also precautionary in that it is careful with the manipulation of the legal instruments, in introducing new categories or new constraints to industries. The expression "regulatory precaution" points to this dual dimension. Regulatory precaution means that uncertainty is the topic of collective exploration, as it is conducted in the groups of experts from European Member State agencies and private companies. This has important consequences in terms of who has the resources to participate in so many arenas of negotiations, and who controls the production of knowledge. Within REACH, companies are in charge of producing and submitting technical information, and have far more resources to engage in the technical examinations of cases than do environmental NGOs, if only because as producers, they have direct access to the substances at stake. Another, related consequence is linked to the politics of uncertainty at the heart of the European regulation of chemicals. Regulatory precaution also implies that uncertainty is actively maintained, since it results in adding new explorations instead of creating new regulatory categories that would be constraining for industrial actors. It does not offer a clear means to transition from a state of permanent uncertainty where cases proliferate to constraining regulatory decisions.

This has consequences for the type of European epistemic and political authority. Propositions such as France's "substances at the nanoparticulate state" and the European

Parliament's definitions of nanomaterials suppose that the regulation of chemicals has the power to craft a new regulatory entity. By contrast, the European experts at ECHA are caught in countless discussions about each of the cases they examine. While regulatory precaution might offer a practical way of conducting a collective exploration of various cases, making opening up this collection exploration to concerned publics and ensuring that it can lead to meaningful regulatory decisions would require a significant institutional work.

Excluding hazardous substances from the market?

Excluding chemicals

While nanomaterials are sometimes discussed in press articles and have attracted the attention of environmental organisations[381], discussions about the many cases used to describe them are confined to the working groups related to the REACH regulation. The fact that regulatory precaution entails a multiplication of those arenas of discussion further relegates the debate about nanomaterials to the arcane circles of European regulation[382]. There are other chemicals, however, that are publicly discussed and have become the topic of very public controversies relating to the potential exclusion of these chemicals from the European market. Discussions about phthalates, flame retardants, glyphosate or endocrine disruptors have been ongoing in Europe for years; they have revolved around the contested authorization or ban of these substances. With these chemicals, we seem to be in a situation where public regulation is expected to act against market forces, by excluding substances at the expense of industrial interests. Thus, while the major thrust of REACH-related activities is the registration of chemicals (and their transformation into legitimate market objects), the European regulation of chemicals also contains procedures meant to ban substances from the European market. Other regulatory texts, such as those related to pesticides, also offer channels for banning chemicals (and I will discuss some of them in this section).

[381] Laurent, 2017

[382] Nanomaterials are regularly discussed in the press. Their suspected hazards are often mentioned in media accounts, but the technical issues of definition are rarely discussed publicly and remain limited to secluded arenas (Laurent, 2017).

Banning chemicals is often controversial, and the controversies adopt a regular pattern. On the one hand, critical voices identify the unmistakable influence of the industrial lobbies, and the reluctance to exclude certain substances from the market[383]. On the other hand, industrial actors often lament decisions that would target substances without considering the variety of their uses and the presence (or absence) of substitutes[384]. This opposition maps onto another one, between "hazard-based" and "risk-based" approaches. The former considers that some substances are hazardous no matter what, and should be unconditionally banned, while the latter argues for examining the situation of exposure to a given substance before stating whether or not it should be regulated, and how.

As we will see in the next few pages, arguments in favour of banning certain chemicals consider that these substances need to be considered intrinsically problematic, and that any exemption to this rule is motivated by political reasons, usually related to the economic interests of private companies. On the other hand, proponents of the risk-based approach contend that theirs is the only scientific approach, and that banning substances on the sole grounds of their "intrinsic properties" is a political decision that is unable to account for the reality of their production and use[385]. Each side uses "science" as an ally and "politics" as an adversary. I take this as a sign that the institutional mechanisms whereby regulatory knowledge can be produced in convincing ways are lacking, or, in other words, as yet another manifestation of the elusiveness of European objectivity.

The next few pages consider examples of substances that have been discussed in those terms. I show that the attempts at banning substances (and at following a line resembling the "hazard-based approach") are rarely successful. Instead, various exemptions are drawn and the eventual regulatory choices are closer to a "risk-based approach". This situation might question the overall validity of the opposition between "hazard-based" and "risk-based". I show that it is also a sign of the pervasiveness of regulatory precaution in the world of chemicals, even in situations where constraining bans related to stable legal categories seem to be the goal.

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[383] See for instance, on endocrine disruptors: Horel, 2015.

[384] This has been a common trope of the discourse of chemical companies, and an object of concern for environmental activists (Boudia and Jas, 2014).

[385] Lofstedt, 2014

Banning substances because of their hazards

Targeting substances that will be excluded from the European market can be done in REACH in conjunction with other regulatory texts that define classes of substances considered dangerous. Thus, the Dangerous Substance Directive of 1967[386] introduced labelling requirements comprising the mandatory use of hazard symbols. A nomenclature was then introduced, with categories such as "explosives", "flammable substances", "toxic substances" or "irritants". These categories were associated with chemical hazard symbols to be used on labels, such as "E" for explosive or "T" or toxic[387]. The 1967 Directive was later refined and re-examined. Its latest occurrence is the 2008 Classification, Labelling and Packing Regulation (CLP), which works in tandem with REACH[388].

Within REACH, substances deemed "of very high concern", known by their acronym SVHC, are defined according to their adverse properties for human health or the environment. They comprise substances that are "carcinogenic, mutagenic and toxic for reproduction" (CMRs), "persisting, bio-accumulative and toxic" (PBTs), as well as "substances of equivalent concern" (ECs). The SVHCs comprise the substances listed in the CLP regulation. REACH states that they can be included on a "candidate list", which is a first step for these substances to be included in REACH's Annex XIV. Annex XIV lists substances that are banned from the European Union unless companies apply for authorization for a specific use and this is granted.

The approach to regulatory categories, here, is different from what we encountered in the case of nanomaterials. Rather than the endless examination of the technical identities of substances, the core of the regulatory intervention is based on the hazardous properties of substances that are deemed intrinsically "of very high concern". Contrary to the registration

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[386] 67/548/EEC. The Directive was later replaced by Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures. The European Court of Justice had ruled in 1985 that Dangerous Substances Directive (67/548/EEC) applies only to pure substances, not preparations (mixtures of substances). Thus, additional texts were introduced for preparations.

[387] Article 27 of the Directive imposes an obligation on suppliers to provide a material safety data sheet, on paper or electronically, at or before the first delivery of a dangerous substance or preparation. The supplier is also obliged to inform users of any relevant new information which becomes known. Directive 2001/58/EC provides detailed guidance for the preparation of material safety data sheets. The symbols to use are described in: Commission Directive 2001/59/EC of 6 August 2001 adapting to technical progress for the 28th time Council Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances, Annex 1A, "Format of entries".

[388] The 2008 CLP regulation also aligns the European system with the Globally Harmonised System (GHS).

of nanomaterials, defining substances as "of very high concern" seems to follow the hazard-based approach. Irrespective of how they are used, the regulatory text considers that these substances are dangerous and should be regulated.

The practical details of how they become regulated entities show that the distinction between "hazard-based" and "risk-based" is not that simple. First, although certain substances (like CMRs) have been automatically included in the candidate list, this is not the case of many[389]. While environmental organisations have been arguing for including all SVHC in the candidate list, in practice Member States and the European Commission have taken into account the volumes of use, the nature of exposure and the type of use[390]. In other words, substances of very high concern are rarely considered as "intrinsically" hazardous and as such worthy of regulation. One can also see here a variation on the case-by-case approach which I introduced above. Instead of banning substances that would be considered hazardous no matter what, the logic consists in examining various cases of exposure and use. This situation is regularly criticized by environmental organisations, as some of them consider that the candidate list is "a drop in the ocean" of the chemicals that should be restricted[391].

Phtalates and authorizing "substances in their use"

The example of phthalates is useful to understand the dynamic of re-introduction of the case-by-case approach even when regulation seems to be hazard-based[392]. Phtalates are found in many sectors, from construction to medical equipment, and are present in numerous consumer products containing plastics. The three phtalates most frequently used

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[389] The EP had proposed that all SVHCs *shall* be listed in the candidate list. This was opposed by the Council, and the final text states that SVHCs *may* be included in the candidate list (European Parliament Report on the proposal for a Regulation of the European Parliament and of the Council concerning (...) (REACH), establishing a European Chemicals Agency, A6-0315/2005 FINAL, Amendment 215 and 216; Council Common Position (EC) No 17/2006 adopted by the Council on 27 June 2006 with a view to adopting Regulation (EC) No .../2006 of the European Parliament and of the Council of... concerning (...) (REACH), establishing a European Chemicals Agency, (...) (2006/C 276 E/01); quoted in Klika, 2015)

[390] Klika, 2015

[391] ChEMTrust et al., "First REACH hazardous chemicals list is a drop in the ocean", Brussels 22 October 2008, cited by Christpher Klika (Klika, 2015). Klika provides a detailed analysis of how the hazard-based approach becomes risk-based in the regulation of the SVHC within REACH, and concurs with NGOs that this shows that the European regulation does not follow its own stated ambition regarding precaution (Klika, 2015).

[392] This section is based on Boullier and Laurent, 2015

(DEHP, DBP and BBP) were included in REACH's Annex XIV in 2011[393] for an effective ban starting in 2015. The ban, however, left room for adaptation. The very logic of "authorization" (in the legal sense of the term) is at play here. First, imported manufactured products are not covered by the procedure ("articles" in REACH's legal vocabulary)[394] – a particularly common situation in the case of phthalates. Second, many uses have in fact been authorized after phtalates were included in Annex XIV. This situation was explicitly questioned at the European Parliament in 2011, when MPs complained about the lack of clarity in regulations on the use of phtalates in toys[395]. Members of Parliament were concerned by the possibilities of authorizing phtalates in a field (toys) that, before the introduction of REACH, had been subject to specific restrictions. In response to the questions raised by these Members of Parliament, the Commission claimed that "a total prohibition without any possibility of exemption would be neither justifiable nor realistic" and that the evaluation of phtalates had to be "case by case, on the basis of scientific information available for each substance"[396]. This statement was in perfect alignment with the legal text, which states that: "Uses or categories of uses may be exempted from the authorisation requirement provided that, on the basis of the existing specific Community legislation (…) the risk is properly controlled"[397].

Phtalates, in other words, enter the European regulation not as substances considered to be intrinsically hazardous, but as substances that should be examined according to specific cases of use, or in other terms "substances-in-their-uses". Thus, phtalate risk assessment reports, submitted by companies who apply for authorization, examine different exposure scenarios for workers, consumers, and people exposed via the environment[398], corresponding to different risk levels. Like the examination of the various cases of nanomaterials registration considered in the previous section, the various uses of phthalates are discussed with the actors involved, including, above all, the companies wishing to use

[393] This had been proposed by Sweden and Austria.

[394] Due to the negotiation of potential trade barriers, the argument against protectionism was particularly strong during the negotiation of REACH and excluded imported articles from the authorization procedure (Boullier, 2015; Boullier and Laurent, 2015).

[395] Question in Parliament by Frédérique Ries on 13 January 2011, with a request for a written reply from the Commission.

[396] Answer given on 2 June 2011 by M. Tajani on behalf of the Commission, to Frédérique Ries's question.

[397] Article 58 §2 of the REACH regulation.

[398] European Commission, 2008, EU Risk Assessment Report on DEHP.

the substances. This leads to authorization of certain uses on the grounds that the risk is properly controlled.

While phthalates seemed to have been banned, the practical conduct of the regulatory work targeted “substances-in-their-uses”, and re-established a case-by-case approach. Here again, regulatory precaution means that precaution is implemented through regulatory instruments, and that regulatory constraint is manipulated with precaution. And in the case of phthalates, as in those discussed above, it is countered by initiatives from Member States. Consider for example a bill submitted to the French Senate in 2011, to "ban the use of phthalates, parabens and alkylphenols"[399]. The rapporteur of the bill announced the motives for this initiative as follows:

> *REACH is less ambitious than originally planned. […] Please, let's not start making the same mistakes as with asbestos and glycol ethers! Whenever we cannot control the sanitary effects of these molecules, we should apply the precautionary principle*[400].

Here, "apply the precautionary principle" consists in banning phtalates by means of regulatory constraints. As the above citation shows, the aim was to be "more ambitious" than REACH. By contrast, the authorization procedure as mobilized in the case of phthalates is entirely consistent with regulatory precaution, which supposes a detailed examination of various cases, while greatly limiting the introduction of regulatory constraints. This is what Henri Boullier’s detailed analysis of the authorization procedure, astutely entitled “authorizing for banning”, reveals[401].

decaBDE and the politics of exemption

The example of phthalates illustrates REACH’s “authorization” procedure. The re-appearance of regulatory precaution in situations where a hazard-based approach could be expected is not specific to this regulatory instrument. A similar dynamic can be observed for REACH’s

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399 Assemblée nationale, 2010, Proposition de loi visant à interdire l’utilisation des phtalates, des parabènes et des alkylphénols, Paris.

400 Examen de la proposition de loi de M. Yvan Lachaud visant à interdire l’utilisation des phtalates, des parabènes et des alkylphénols (n° 2738) (M. Yvan Lachaud, rapporteur), Commission des affaires sociales de l’Assemblée nationale, mardi 5 avril 2011.

401 Boullier, 2015

"restriction" procedure. The controversial flame retardant DecaBDE is a fine illustration of this dynamic.

Deca-BDE had been used for decades as a "flame retardant", meaning that it has been added in consumer products such as toys, clothes or furniture on the grounds that it could slow the propagation of fire. Like other flame retardants, its alleged beneficial properties and the health hazards it causes have been controversial for years. And like other flame retardants, it has been the target of intense lobbying activities from the industry in the United States and Europe[402]. In February 2017, the European Commission announced that decaBDE was included in REACH's Annex XVII, which lists the substances that are "restricted" – meaning that they are prohibited on the European market for the uses listed in Annex XVII. The amendment to REACH's Annex XVII banned the use of deca-BDE as a substance and limited the content of deca-BDE in articles to 0.1%[403]. As commented by the expert reports that argued for the inclusion of deca-BDE in REACH's Annex XVII, restriction was much more constraining than authorization[404]. At last, deca-BDE would be banned in Europe.

The reaction of environmental organisations was however tepid[405]. The European Environmental Bureau lamented that it took more than fifteen years to restrict deca-BDE, while the scientific evidence showing its negative effects for human health and the environment had been available for much longer. In fact, banning deca-BDE had already been discussed in the early 2000s[406], but not agreed upon. Risk assessment reports produced by expert agencies in France and the UK did not support the ban, while the European Commission's own advisory bodies (the Scientific Committee on Health and

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[402] See: ANSES, 2014, *Evaluation des risques* liés à l'exposition aux retardateurs de flamme dans les meubles rembourrés. Partie 1 - Efficacité contre le risque d'incendie des retardateurs de flamme dans les meubles rembourrés, Rapport d'expertise collective. I participated in this work as a member of an expert working group at ANSES.

[403] Commission Regulation (EU) 2017/227 of 9 February 2017 amending Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regards bis(pentabromophenyl)ether

[404] The ECHA's Committee for Socio-Economic Analysis and Committee for Risk Assessment had stated this in previous reports about deca-BDE (see: "RAC and SEAC Opinion on an Annex XV dossier proposing restriction on Bis(pentabromophenyl) ether (DecaBDE)", 2015).

[405] "EEB reaction to the Commission's regulation on flame retardant decaBDE", Feb2017: http://www.eeb.org/index.cfm/news-events/news/eeb-reaction-to-the-commission-s-regulation-on-flame-retardantdecabde/, last accessed May 4, 2018.

[406] At the time, these discussions occurred within the framework of the dangerous substance directive.

Environmental Risks) did[407]. Deca-BDE was not banned, and only a voluntary emission reduction monitoring programme was decided by companies. The 2017 decision shows that it had little effect.

Another reason for complaint by the environmental organisations was the many exceptions to restriction that the 2017 decision introduced. The restriction of deca-BDE made it possible to still use the substance in several domains, including aviation and, under certain conditions, the automobile industry. Other exemptions related to the fact that the restriction did not cover electronic equipment, regulated by the "directive on restriction on the use of certain hazardous substances in electrical and electronic equipment". Known as the RoHS Directive (2002/95/EC), this piece of legislation was adopted in January 2003 and lists chemicals that were expected to be banned by 2006. Deca-BDE was listed there, but the RoHS Directive also includes a stage of discussion between the EC and Member States, for discussing situations in which the use of substitutes was deemed unfeasible, and introducing exemptions. This led to forgoing the ban of deca-BDE, a decision that was challenged in the ECJ by the European Parliament and Denmark, supported by several Member States. In April 2008, the ECJ annulled the Commission's exemption for procedural reasons, while Sweden introduced a national initiative to ban deca-BDE[408].

In the story of deca-BDE, exemptions are the rule rather than the exception. Rather than banning a substance neatly defined as intrinsically hazardous, legal or economic particularities are taken into account to carve out exemptions. The explanatory reports submitted by ECHA to support the restricting decision provide some element to understand the origin of these exemptions[409]. These reports explain that companies from these sectors were active during consultation phases to make the case for the difficulties in finding substitutes to deca-BDE, and for their ability to manage its risks. These arguments were then the basis for exemptions to the restriction of deca-BDE. The eventual return of a case-by-case approach within the restriction procedure is possible only within a regulatory system based on regular interactions with interest groups. It is a manifestation of the intense lobbying activity that characterizes policy-making in Brussels. One way of interpreting it is to

[407] Eriksson et al., 2010

[408] Eriksson et al., 2010; Løkke, 2006

[409] "RAC and SEAC Opinion on an Annex XV dossier proposing restriction on Bis(pentabromophenyl) ether (DecaBDE)", 2015

identify the unmistakable influence of powerful economic actors eager to protect their interests from regulatory burdens. This is a first layer of the politics of category making for chemicals. A second layer stems from the problematization of European objects and European intervention that regulatory precaution entails. As the use of precaution implies continuous explorations of various cases, then the consideration of multiple cases of possible or impossible substitution and the conduct of collective negotiations automatically follow. The companies involved in the concerned sector then have a strong incentive to voice their interests and concerns. In other words, the very logic of regulatory precaution consists in tying the production of regulatory knowledge to the interests and concerns of the actors involved. That companies make their interest explicit is then not surprising, but potentially problematic if other actors (such as environmental protection groups or Member States) have fewer resources to voice theirs.

Endocrine disruptors and the politics of regulatory definition

Phthalates and deca-BDE are controversial because of their hazards. They are, however, well defined substances. This is a stark contrast to other situations, where even the definition of the object is controversial. Nanomaterials was an illustration of such situations. Endocrine disruptors are another one. Phthalates and deca-BDE are considered endocrine disruptors, and this has been a motivation for including them in REACH's Annexes[410]. But these initiatives are isolated, and do not target the whole set of substances that have adverse effects on the human endocrine system.

While the European institutions have recognized the need for action, it was not until the pesticide legislation changed in 2009 that constraining regulatory interventions explicitly targeting endocrine disruptors could be envisioned. The 2009 pesticide regulation was considered a radical change. German European MP for the Green Party, Hiltrud Breyer, called it "not only a milestone for environmental and consumer protection in Europe" but also "a magic moment for Europe"[411]. If the moment was "magic", it was because of the shift from risk to hazard in the consideration of pesticides that could be banned. Instead of

[410] See a discussion in Milieu Ltd, the T.M.C. Asser Institute and Pace, 2011, *Considerations on the application of the Precautionary Principle in the chemicals sector*, for DG Environment of the European Commission under Study Contract No. ENV.D.3/SER/2010/0083rl.

[411] Breyer, 2009, quoted in Bozzini, 2017

evaluating the risk of each pesticide before (possibly) banning it, and for certain uses, substances would be banned according to their intrinsic hazardous properties. This shift can be read in the terms we have been using. Instead of examining each separate case in a regulatory precautionary approach, the 2009 pesticide regulation would offer a legal channel for excluding substances from the European market because of their intrinsic properties.

The 2009 regulation proposed the following process to do so. Companies seeking to put pesticides (or "plant protection products") on the European market must submit an application to a national "competent authority" in one of the Member States. The Member State then acts as a "rapporteur" for the product, and is in charge of producing a "draft assessment report" (DAR), which is sent to the European Food Safety Authority (EFSA). EFSA then conducts a risk assessment. A risk management phase follows, during which DG Health, other services of the European Commission, and the applicants can comment on the EFSA conclusions, and the Standing Committee on Plants, Animals, Food and Feed votes on the proposed regulation. This last phase often sees Member States divided. For instance, for both neonicotinoids (controversial for their effects on bees) and glyphosate, neither a qualified majority nor a blocking minority could be reached[412].

While this process resembles others in European law, for instance those related to the REACH Regulation, the 2009 Regulation introduced a significant shift in the form of criteria that automatically make it impossible to authorize certain substances. Thus, Annex II of the 2009 Regulation comprises a series of paragraphs formulated in a similar way:

> *An active substance, safener or synergist shall only be approved if, on the basis of the assessment of the available evidence carried out in accordance with the data requirements for the active substances, safeners or synergists and other available data and information, it is not identified as having endocrine disrupting properties with respect to humans*[413]

In plain language, this paragraph means that if a pesticide has endocrine disrupting properties, it can automatically be banned from the European market. If the rapporteur

[412] Bozzini, 2017

[413] Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC, Annex II

Member State identifies a substance as an endocrine disruptor, then no risk assessment is undertaken by the EFSA, and the substance cannot be authorized. The following paragraphs adopt the same language, for "reproductive toxicity" (3.6.4.), and "carcinogenicity" (3.6.5). These criteria are known as "cut-off criteria" since they automatically mean that the substance in question is banned.

The introduction of these criteria has been interpreted as a move away from the case-by-case examination of substances in their uses, and towards a "hazard-based" approach. As scholar of environmental regulation Emanuela Bozzini shows, the introduction of cut-off criteria has been criticized by companies and some Member States (particularly the United Kingdom) "as an additional indication of the path towards arbitrary, risk-averse and ultimately irrational decisions taken by the EU in the field of risk regulation"[414]. Among the cut-off criteria introduced in the 2009 Regulation, "endocrine disrupting properties" have become the most complicated to deal with, and the problem of definition is probably the main reason. While the European Parliament was instrumental in including them in the 2009 Regulation, the European Commission was far more reluctant to act after the text was passed. Legally prompted to provide a "draft of the measures concerning specific scientific criteria for the determination of endocrine disrupting properties" by 14 December 2013[415], the European Commission failed to meet the deadline, and was challenged by Sweden in the ECJ. The Court eventually requested the Commission to act in December 2015. The negotiation process that followed has been analysed in detail by journalist Stéphane Horel[416]. She neatly described the intricate manoeuvres of the internal power dynamics inside the Commission. As the responsibility for the issue shifted from DG Environment to DG Health (closer to industrial interests in her account), additional expert reports were commissioned, and EFSA published an opinion that softened the international organisations'

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[414] Bozzini, 2017: 32. The quote above, however, is followed by the following considerations: *"unless the risk to humans from exposure to that active substance, safener or synergist in a plant protection product, under realistic worst case proposed conditions of use, is negligible, in particular where the product is used in closed systems or in other conditions which aim at excluding contact with humans, and where maximum residue levels of the active substance, safener or synergist concerned in or on food and feed can, taking account of the latest opinion of the Authority with respect to that active substance, synergist, safener, be set in accordance with Regulation (EC) No 396/2005, which ensure a high level of consumer protection."*
The possibility to still allow for authorization when "exposure is negligible" leaves room for interpretation, and has regularly been criticized by environmental organisations for the limitation it could introduce to the hazard-based approach.

[415] 2009 Regulation, Annex II, 3.6.5

[416] Horel, 2015

statements regarding the hazards of endocrine disruptors. These episodes reveal the high stakes of the process in terms of consequences for human health and of involvement of industrial interests. They are also direct consequences of fundamental disagreements about the scientific expertise needed and the appropriate regulatory approach.

Two of these points of contention warrant attention. First, the notion of potency, which classifies substances according to their relationships between dose and effects, is both central for toxicology and problematic for endocrine disruptors. Endocrinologists claim that potency is not applicable in the case of endocrine disrupters or, in other words, that their effects are not necessarily related to the dose humans are exposed to. By contrast, companies have been arguing that potency is a relevant criterion, and scientist with close links to companies have been calling for the use of potency to differentiate among other substances considered hazardous, on the grounds of carcinogenicity and reproductive toxicology[417]. Second, the possibility to classify endocrine disruptors according to the level of certainty of their hazards has been discussed. Civil society groups and Member States such as Denmark, Sweden and France have been arguing for a classification system based on the level and certainty of hazards. In this system a substance could be an endocrine disruptor or a suspected "endocrine disruptor".

In June 2016, the Commission proposed draft legal acts "which set the criteria to identify endocrine disruptors"[418]. It endorsed a definition introduced by the World Health Organisation, which states that:

> *An endocrine disruptor is an exogenous substance or mixture that alters function(s) of the endocrine system and consequently causes adverse health effects in an intact organism, or its progeny, or (sub) populations.*

The Commission rejected the propositions for different categories of endocrine disruptors, and potency as a criterion to identify endocrine disruptors. While "fully maintaining the concept of a hazard-based ban on endocrine disruptors", it considered that "endocrine disruptors (…) could be assessed based on risk, like most other substances". This position can be seen as a somewhat clumsy compromise resulting from a conflicted negotiation. It was

[417] Instead of one class of CMR, Hennes et al., 2014 claim that one could discriminate in various "degrees of magnitude", depending on the dose-effect relationships; see also Boobis et al., 2016

[418] Quote from the press release (http://europa.eu/rapid/press-release_IP-16-2152_en.htm).

not well received by NGOs and a group of Member States that had taken a strong position in favour of the regulation of endocrine disruptors. It was eventually accepted at the Council when France shifted its position after its May 2017 presidential election, only to be rejected by the European Parliament in February 2018.

Endocrine disruptors provide a telling illustration of the difficulty of crafting regulatory categories for chemicals. Banning substances from the European market based on their effects on the human endocrine system is even more complex than targeting a group of substances as "nanomaterials" because of their size-related properties. The current situation in which the European Commission has become "a reluctant pioneer in the field of endocrine disruptors", in the words of an analyst of the field[419], is revelatory. It displays a tension between pervasive calls for excluding a group of substances from the European market on the basis of their intrinsic properties, and attempts at targeting them in ways that leave room for adaptation, not only to a series of economic and legal constraints, but also to the uncertainty about these intrinsic properties. This tension has been encountered in the case of nanomaterials. It resulted in the regulatory precautionary approach described in the previous section. In that case, the European Parliament also managed to force the European Commission to define nanomaterials[420]. The Commission did so in a "Communication" released in 2011[421], which defined nanomaterials using size and size distribution criteria without connection with any regulatory intervention[422]. Here, the Commission could produce a general definition with no legal implication, while regulating nanomaterials on a case-by-case basis. By contrast, the definition of endocrine disruptors, if it is ever stabilized in the European regulation, will have large-scale consequences for companies, since it will be used to operationalize cut-off criteria.

Conclusion: regulatory precaution and the difficulties of interested objectivity

Endocrine disruptors might be the latest illustration of the quandary faced by the European regulators of chemicals. This quandary originates from the pervasiveness of regulatory

[419] Bozzini, 2017: 92
[420] European Parliament resolution of 24 April 2009 on regulatory aspects of nanomaterials (2008/2208(INI))
[421] Commission Recommendation of 18 October 2011 on the definition of nanomaterial (2011/696/EU)
[422] Laurent, 2017

precaution, and the impossibility to ensure a European epistemic authority able to unproblematically rule on which chemicals can be excluded from and included in the European market. Regulatory precaution implies that regulatory categories multiply, as do the sites for collective discussion. At first sight, regulatory precaution operates in situations where the European interventions aim to turn chemicals into market entities fit for circulation in Europe. Situations in which the ban on certain substances because of their intrinsic hazardous characteristics is at stake seem to provide a different problematization of European objects. Rather than making categories multiply, they would require that a neat boundary between what is excluded and what is authorized be drawn. However, the opposition between "hazard-based" and "risk-based" does not account for how chemicals are banned in practice. Phthalates provide an illustration of how the European regulation considers many "substances in their use". Deca-BDE has been excluded, but only on condition that exemptions are granted. Endocrine disruptors show the strong constraints put on attempts at excluding an entire group of chemicals defined by their properties.

These last three examples have been the topic of many discussions, and many of the debates they have generated have witnessed the confrontation of diametrically opposed critical discourses. While they are often seen as illustrations of the influence of industrial companies in digging holes in the regulatory net, they are also discussed as situations where "politics" trumps "science"[423]. These readings are significant. They show a dual weakness of regulatory precaution. First, regulatory precaution has so far failed to provide grounds for ensuring the legitimacy of European decision-making. The multiplication of negotiation arenas might be seen as an extension of the broader arena in which the collective exploration of technical issues can be conducted, pretty much in the manner of what Michel Callon calls hybrid fora[424]. But this multiplication means in practice that access to these sites requires important resources, and that European experts are faced with an asymmetrical access to technical information. Therefore, what could be construed as a careful approach to regulation, opening up new sites for collective discussions and leaving room for future adaptation according to new scientific results, is often described as a complex institutional machinery, where arcane procedures give much leeway to the most skilled lobbyists, and

[423] Lofsted, 2011
[424] Callon et al., 2009

where decisions are made with little, if any, publicization of the reasoning underpinning them.

The second (and related) weakness of regulatory precaution pertains to its limited ability to provide satisfactory institutional grounds for the European production of technical expertise that I described in chapter 5 with the terms “interested objectivity”. This is visible in the endless debates about the appropriate scientific arguments to be used by the European institutions, and the contested reference to “scientific” and “political” choices by the actors involved. It has consequences for the nature of the European expertise and in fact for the role of the European expert. Attempts at producing a unified European scientific voice are made (for instance as expert agencies are involved) but they fail to settle the regulatory debates (as, for instance, the opinions of the Scientific Committee on Emerging and Newly Identified Health Risks about flame retardants are not followed). Instead, regulatory precaution implies that European expertise has to question the scientific basis of decision-making for each new case, and that the concerns of the parties involved are taken into account.

A frequent, but not satisfactory, answer to this situation is to call for additional scientific expertise, and hoping that it can be freed from political considerations. This is evident when considering recent initiatives that propose to use models to approximate the risks of chemicals. As François Thoreau and I have shown, using models for the European regulation of chemicals implies a situated expert judgment, whereby the European experts need to open up the methods used by companies and cannot ground their decisions on ready-made black-boxed instruments[425]. This means that models cannot provide ready-made tools to support a centralized and unproblematic European objectivity. If regularly used within the European regulation of chemicals, models would require collective negotiations and an effort in stabilizing acceptable regulatory processes. In other words, the use of models will not eliminate the need to provide institutional grounds for interested objectivity.

The case of chemicals is particularly interesting for our reflection about the dreams of harmonization. It is an illustration of the impossibility of defining objectivity as the outcome of a view-from-nowhere, as the making of technical categories is also a platform for political negotiations and the expression of public concerns. In this situation, one can consider that

[425] Laurent and Thoreau, 2019

regulatory precaution is hopelessly bound to favour the most skilled lobbyists. Another analytical and political path consists in considering that regulatory precaution is a proposition for organising European expertise and the European markets of chemicals, yet in dire need of discursive and institutional support. This latter perspective makes European objects potential platforms for rethinking the practices and long-term objectives of harmonization. It requires an ambitious reflection about how to open up the negotiations about chemicals and each of the "cases" of the case-by-case approach, and how to govern uncertainty in ways that associate the exploration of cases with constraining regulatory decisions. Perhaps more importantly, it demands a reappraisal of the principles of harmonization, whereby technical objects can be seen as explicit political matters, and the dream of objectivity can be redefined in the terms of interested objectivity.

Chapter 7. Governing with and without thresholds

This chapter focuses on the European environment. We have encountered numerous environmental issues so far, in the discussion on cases related to tobacco, chemicals, and climate change. We have thus seen a dynamics of extension of European power towards health and environmental issues through the constitution of disentangled market objects such as tobacco or waste. The previous chapter also examined problematic European objects, chemicals, which are defined according to the risks they entail, and governed according to regulatory precaution. In all these cases, the environmental issue was problematized as a matter of qualifying objects. The question the European actors we encountered were struggling with was: "what are 'green enough' European objects?"

In this chapter, I consider situations where the European environment is the explicit target of regulatory intervention. The question here is then: "how to ensure that the European environment is sufficiently protected?" To start examining who asks this question and how it is answered, we can turn to the European Environment Agency (EEA), which is specifically in charge of environmental affairs. The EEA was created in 1993 as a platform to collect and share information about environmental issues. Brian Wynne and Claire Waterton have demonstrated that the EEA operates in a state of constant tension between a desire to craft a unique scientific approach that would iron out differences across Member States, and the recognition that technical practices vary across Member States[426]. They study an environmental information system, in particular, and show how attempts at standardizing categories run into difficulties related to the national politics of category making. This example resonates with the discussion that I introduced in Chapter 5 on the elusive European objectivity, caught between an impossible view from nowhere and an unstable interested objectivity. Producing a "European science" about the environment does not seem to be easier than manufacturing expertise about controversial products such as GMOs.

[426] Waterton and Wynne, 1996; 2004

Most of the cases where the European environment is at stake do not relate to the work of the dedicated European agency though. Numerous pieces of legislation are meant to make the European air and water cleaner, and thereby define what an acceptable European environment might be. What a "clean enough" European air or water might be, and what it says of Europe itself, are questions that this chapter asks. A would-be clean European environment is made of different kinds of objects to many of those we have considered so far. These objects are not market entities. Instead, they are expected to be protected from the negative consequences of market activities, what economists would call "negative externalities", of which pollution is a prime example. I show in this chapter that one can identify a problematization of European objects that makes the determination and implementation of thresholds a prime regulatory concern. Thresholds are used in many environmental policies across the world to define limit values of various pollutants, and Europe is no exception. In fact, defining the environment by thresholds holds a special place within the European regulatory system. The first section of this chapter discusses what this approach entails, for the environmental objects at stake and for the type of European interventions that it sustains. The second section of the chapter pursues this exploration by analysing market-based mechanisms that were explicitly conceived as an alternative to the setting of thresholds. Thus, a market of "green technologies" was intended to ensure that air pollutants levels would be limited, while spurring new domains of economic growth. This alternative to the use of thresholds introduces new European market objects, the "best available techniques".

Scholars of European environmental law often identify an evolution in several stages, starting when the environment became a topic of regulatory concern. They explain that constraining command and control mechanisms were introduced in the 1980s. After the 1990s, market-based instruments, of which the European carbon market is the most visible example, were used more and more[427]. Scholars have spoken of "positive" and "negative" integration to contrast constraining regulatory measures that all Member States need to follow (e.g. emission levels for pollutants) and initiatives designed to ensure economic competition[428]. Establishing thresholds can appear as illustrations of the first of these phases, and of positive integration. Rather than being market-based, they act on it. By

[427] Knill and Liefferink, 2013
[428] Knill and Lehmkuhl, 1999

contrast, best available techniques can be seen as illustrations of the second phase, and of negative integration. Rather then defining thresholds by regulatory means, they constitute a new market expected to incentivize actors to adopt more sustainable behaviours. The distinction between command-and-control and market mechanisms, and between positive and negative integration, appears however to be less clear. We will see that while setting thresholds might appear as a process whereby technical expertise is used to act against the market, it is in many respects related to operations intended to organise markets. The European interventions based on best available techniques are indeed market-based, but they do not isolate a market from policy making. They do not identify and treat individually a well-defined European object that would circulate as a single market entity across Europe. Rather, they make various "best available techniques" coexist, by associating the organisation of markets with political negotiations.

Thus, the examples that I discuss in this chapter do not clearly match the distinction between what is "market-based" and what is not, between what can be delegated to economic actors and what should be based on regulatory expertise. Environmental objects, be they related to the air and water to protect, or to technologies endowed with environmental qualities, are defined at the intersection of the organisation of markets and the production of scientific knowledge. They are related to European interventions, with or without thresholds, that do not seek to carve out an isolated domain for the market, and use an expertise that is never understood as the outcome of a single authoritative voice emanating from a view from nowhere. Thus, the analysis of how the European environment is governed will lead us to identify institutional constructs that displace the dreams of European objectivity and that of a disentangled European market.

The politics of European thresholds

A way of regulating the environment: setting limits for pollutants

Environmental regulation is not a traditional domain of European intervention. It was first envisioned as a way of ensuring that different legal frameworks across Member States

would not constitute trade barriers[429]. The 1986 European Single Act introduced explicit provisions for European intervention on environment, health and safety. It mentioned "a high level of health, safety and environmental protection" as one of the objectives of European action. This did not provide the same possibility of intervention as in issues related to market integration – which is why the European Commission used the harmonization of market objects as a way of extending its ability to act on health or environmental policy, as we saw in Chapter 3. Yet it also spurred a growth of environmental regulation in Europe, only recently complemented by the development of hybrid mechanisms that are less constraining than the uniform legal norm and rely partly on markets, of which the carbon emission trading system is a prime example[430].

This section discusses a mode of regulatory intervention that is not specific to Europe, but has been adapted to the European practice of policy-making. This mode is based on thresholds used as mandatory limits, usually of pollutants, in order to define the minimal qualities that the European environment should offer. For instance, air quality is governed by a large range of European directives specifying the limits of pollutants that Member States are expected to apply. A 2008 directive grouped together a set of existing texts defining the limits for pollutants such as sulphur dioxide, nitrogen dioxide and oxides of nitrogen, benzene, carbon monoxide and ozone[431]. In 2016, a new "national emission ceiling" (NEC) directive defined ceilings for each Member State to respect, for five air pollutants (nitrogen oxides, non-methane volatile organic compounds, sulphur dioxide, ammonia, and fine particulate matter)[432]. Occupational health has long been governed by European texts related to levels of exposure to various adverse substances in the work

[429] Rehbinder and Stewart, 1985

[430] Jordan et al., 2012; Knill and Liefferink, 2013

[431] Directive 2008/50/EC on ambient air quality and cleaner air for Europe, grouped together several directives (Council Directive 1999/30/EC relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air, Directive 2000/69/EC of the European Parliament and of the Council relating to limit values for benzene and carbon monoxide in ambient air*, Directive 2002/3/EC* of the European Parliament and of the Council relating to ozone in ambient air). Directive 2004/107/EC of the European Parliament and of the Council relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air remained a separate text.

[432] Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC

environment. The VOC (Volatile Organic Compounds) directive of 1999[433] defined emission threshold values for VOCs. Occupational exposure limits are set at the European level by specific directives[434] which define "indicative occupational exposure limit values (IOELV)" for Member States to implement, and establish exposure thresholds for about thirty chemical agents. The European Agency for Safety and Health at Work defines IOELVs as "health-based, non-binding values, derived from the most recent scientific data available and taking into account the availability of reliable measurement techniques"[435].

My objective here is not to provide an exhaustive description of all these texts, but to give a sense of the pervasiveness of the mode of regulation of environmental concerns based on thresholds, and how it problematizes European objects and European interventions. Accordingly, I am less interested here in the details of the many discussions – which are often very controversial – about how to set the limits, than in what defining environmental concerns in terms of thresholds to respect actually means.

Governing the European environment by thresholds

Governing the European environment by thresholds has three main characteristics: it is the outcomes of negotiations (1); it delegates elements of the production and implementation of thresholds to Member States and private actors (2); and it requires regular controls that are at best imperfect (3).

First, governing by thresholds in Europe means that Member States, members of the European Parliament, and representatives of diverse interest groups, negotiate what the thresholds will be. Examples related to occupational safety, such as silica, show that negotiating exposure levels results in a particular politics of compromise, which in turn

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[433] Directive 1999/13/EC on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations, later amended by the "Paint Directive" (Directive 2004/42/EC).

[434] The most recent one is Directive 2017/164/EU on indicative occupational limit values of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU. The legal framework to do so is provided by Article 3 of Directive 98/24/EC concerning the protection of the health and safety of workers from the risks related to chemical agents in the workplace (cf. https://osha.europa.eu/fr/legislation/directive/directive-2017164eu-indicative-occupational-exposure-limit-values last accessed May 26, 2018).

[435] https://osha.europa.eu/fr/legislation/directive/directive-2017164eu-indicative-occupational-exposure-limit-values last accessed 26 May 2018

results in lowering the safety standards deemed appropriate by the advocates of worker protection[436]. The politics of compromise in negotiating thresholds is not specific to European environmental regulation. In fact, the silica example studied by historians Markowitz and Rosner occurred in the United States. But it is particularly relevant to account for the dynamics of technical expertise within the European institutions, particularly the negotiations that are part and parcel of the production of technical decisions. Thus, setting thresholds is the outcome of lengthy negotiations, during which technical, political and economic considerations are taken into account. Thresholds are never thought of as purely "scientific" numbers, free of political influence[437], even if they are often inspired by expert agencies (for instance, the Scientific Committee on Occupational Exposure Limits (SCOEL) is in charge of providing scientific advice on the said limits). On the contrary, they are explicitly produced as outcomes of political negotiations, which take into account a large set of factors, some technical, and others related to economic costs or the particularity of national practices. This means that the European government by thresholds might work with thresholds that are not uniform across Europe. Thus, the "National Emission Ceilings" used in the corresponding directive are calculated for each Member State, taking into account a whole range of parameters in order to define "national emission reduction commitments" for several air pollutants[438]. The definition of these ceilings was the outcome of negotiations, during which some Member States agreed to give ground on certain pollutants in exchange for leniency about others. A participant in these negotiations whom I met illustrated these negotiations in those terms: "Germany would give up on NH3 [an emission product of agriculture] in order to protect its industrial sector; Member States would exchange this or that sector with each other"[439]. Thus, European thresholds are not always unified numbers valid everywhere across the Union. The objects they describe differ across Member States, and are not unified entities. Government by threshold can hope to be "objective", but in the very particular sense of interested objectivity. Instead of providing descriptions of the

[436] Markowitz and Rosner, 1995

[437] Historical and sociological analysis of occupational safety have shown the adverse consequences of conceiving of exposure limit values as scientific entities, as it overlooks the fact that they are outcomes of compromise (Henry, 2017).

[438] Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC, see https://www.eea.europa.eu/themes/air/national-emission-ceilings last accessed 27 May 2018.

[439] Interview, former civil servant at the French Ministry of Ecology, Paris, December 2018.

environment based on science and carefully separated from policy, and consequently believed to be universally valid, it mixes scientific and political concerns in setting limits and adapting them to national situations.

Second, governing by thresholds implies delegating the production and implementation of thresholds. In environmental law, the legal format of the European text is the directive[440], which means that Member States are in charge of incorporating the thresholds into national legislation, along with the entities to which they are expected to be applied (for instance: vulnerable areas for nitrates), and the measurement methods used. As they implement directives, Member States might further delegate the production and aggregation of quantified indicators to other actors, including private ones directly involved in polluting activities. In France, for instance, the *Centre Interprofessionnel Technique d'Etudes de la Pollution Atmosphérique* (CITEPA) is in charge of producing the measures of air pollutants required by the National Emission Ceiling (NEC) directive. CITEPA is a non-profit organisation that operates as a network of professional bodies in various industrial sectors, who directly intervene in developing calculation methods for measuring pollutants originating from these very sectors. Thus, far from creating uniform European objects defined by a reduced set of carefully delimited and quantified criteria, the European government by thresholds appears as yet another manifestation of interested objectivity (see Chapter 5), and the outcome of a process where various interests, including economic ones, are directly involved. This results in distributed European objects, as the European air, water or occupational environment is diversely measured across the Union.

Third, governing by thresholds is based on constant yet barely successful control. On the one hand, thresholds make control easier, in that they provide identifiable indicators that can allow the European executive bodies to single out non-compliant Member States. For instance, the European Commission has regularly targeted France for nitrate levels in water, and six countries appeared before the European Court of Justice in 2018 because of excess levels of air pollutants[441]. On the other hand, governing by thresholds in Europe is not synonymous with direct regulatory intervention ensuring that control is indeed exercised.

[440] This is a consequence of the fact that environment is a shared competence between the European Union and the Member States.

[441] "Qualité de l'air : Bruxelles renvoie six pays dont la France et l'Allemagne devant la justice", *Libération*, May 17, 2018. http://www.liberation.fr/societe/2018/05/17/qualite-de-l-air-bruxelles-renvoie-6-pays-dont-la-france-et-l-allemagne-devant-la-justice_1650740 last accessed May 26, 2018.7

Court cases are not always initiated, and when they are, they are often lengthy[442]. As a consequence of delegation, control is exercised in indirect ways. Member States need to report various indicators to the European Commission, and these indicators are themselves computed by a variety of actors, some of them closely associated with private interests. How this reporting is undertaken can then vary widely among Member States. When I met an official at the air quality office of the French Ministry of Ecology to talk about European thresholds and how to control them, he spoke of the "endless reports" required by the European Commission, and lamented the uncertainty about how to fill them[443]. He had in mind not only the quantitative requirements but also others, related to the policy actions undertaken in order to meet legal targets. He was asked to list all the initiatives that the French government had launched to comply with the European thresholds. Always wondering what ought to be considered, he hesitated about whether public transportation plans or sustainable energy support programmes had to be included. It is therefore not surprising that the control exercised by the European Commission is acutely felt by officials in national public administrations, while leading to considerable variations in what is controlled and how.

Turning the environment into European objects defined by thresholds

Governing the environment by thresholds means that certain types of European objects are constituted, namely environmental entities defined by a limited number of quantifiable characteristics. Such definitions give a particular shape to environmental concerns. Occupational safety is a particularly interesting example to understand this point. Political scientist Emmanuel Henry has studied how exposure limit values were gradually introduced in France, and what this process revealed of the politics of governing occupational safety by these values[444]. While the use of exposure limit values has been used in many countries

[442] For instance, France was condemned by the European Court of Justice only in 2001 for not applying the 1975 Surface Water Directive, in spite of numerous previous warnings by the European Commission (Case C-266/99) France lost another case on the same topic (CJ-193/12, Commission v. France). The conflict was settled only in 2007 as France adopted more constraining measures, and the European Commission closed its infringement case ("Drinking water: Commission welcomes French compliance with EU rules on nitrate pollution in Brittany", press release, 24 June 2010, http://europa.eu/rapid/press-release_IP-10-831_en.htm last accessed 26 May 2018).

[443] Interview, Paris, November 2018.

[444] Henry, 2015; 2017

since the early 20th century, France did not introduce them until the 1980s, and in a non-mandatory way. It was moreover only after European directives sought to harmonize exposure limit values that France tied them to regulatory constraints. This reluctance can be connected to the fact that in France, unlike other Western countries, occupational physicians and not toxicologists had traditionally been in charge of occupational safety. But it also signals that turning the highly local situation of occupational safety into a set of quantified variables has consequences. The introduction of exposure limit values standardizes occupational safety and makes each local situation both publicly visible and comparable to others. Henry shows the dual consequence of this evolution in France. First, the introduction of thresholds made publicly visible the ongoing arbitration to determine the levels of risk that were deemed acceptable. Accepting certain exposure limit values has meant that no such thing as a zero risk situation would be required. Second, it turned a matter of negotiations between trade unions and employers into an issue related to discrete quantitative measurements. These measurements were only as accurate as the technical instruments used to take them. The case of occupational safety in France suggests that governing by thresholds is never neutral, as it implies that complex and situated cases are turned into matters related to the measurement of individual elements that make these cases comparable to each other.

Thus, governing by thresholds implies constituting particular European objects, which eliminates more situated and qualitative approaches. Occupational safety in France is a story of the introduction of government by thresholds, and how it resulted in new quantifiable European objects. The case of the European regulation of water can be read as a failed attempt to reverse that trend, which helps understand why defining environmental objects by thresholds has remained alluring for the European public bodies. While the early European texts regulating water were based on a limited set of thresholds[445], the 2000 Water Framework Directive[446] (WTD) introduced a radical change of perspective, based on an ecological understanding of the protection of water. As a specialist of the WTD noted: "the directive's philosophy consists in determining ecological objectives for aquatic

[445] Previous directives dealt with certain uses of water (drinking, bathing, fishing, etc.) and types of water (surface or underground), or targeted certain pollutants (such as nitrates). Some were included in the WTD and others remained in place. See a general discussion in Bouleau, 2007.

[446] Water Framework Directive (2000/60/EC)

milieus"[447]. Setting "ecological" objectives implied a departure from the previous European texts, in that it aimed to grasp the global situation of "milieus" instead of collecting separate sets of indicators. The WTD introduced a new objective, the "good ecological status", and a new regulatory entity that had to meet this objective, the "river basin". A series of "integrated" expectations were introduced for river basins, including "general protection of the aquatic ecology, specific protection of unique and valuable habitats, protection of drinking water resources, and protection of bathing water"[448], and which had to be the topic of "management plans" that Member States were compelled to submit. Thus, the WTD sought to ensure not only that independent parameters related to water were monitored, but also that ecological systems were managed, taking into account a wide range of factors, including the biological characteristics of habitats, the economic costs that consumers, public bodies and private actors had to bear, and the need for the political engagement of the actors involved[449]. The WTD can be read as an attempt to turn the government by thresholds into a another mode of public action, targeting heterogeneous and possibly trans-boundary entities (the river basins), and leaving room for the ecological description of habitats and milieus.

This objective proved to be far too ambitious for the national public administrations in charge of operationalizing it. Critical accounts of the implementation of the WTD abound, both within environment protection organisations and in the academic community. Ten years after the WTD, there were "three hundred ways to assess Europe's surface waters" to comply with the WTD[450], and "no generally applicable European method for water body assessment"[451]. In this context, public administrations have often reverted back to known indicators and practices[452]. This has prompted specialists of water ecology to consider that rather than looking at the "total environment", the WTD has resulted in a "political compromise" whereby public agencies revert to their known practices, reducing habitats

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447 Bouleau, 2007: 349, my translation

448 "Introduction the new EU Water Framework Directive", EC DG Environment, http://ec.europa.eu/environment/water/water-framework/info/intro_en.htm last accessed 27 May 2018.

449 This grand ambition was the outcome of a lengthy negotiation process, and the first (and possibly unexpected) product of the co-decision procedure between the Parliament and the Council for environmental matters. See Bouleau, 2007, and Kaika, 2003 for a detailed account of the successive versions of the WTD as it circulated between the Council, the Commission and the Parliament.

450 Birk et al., 2012

451 Hering et al., 2010: 4015

452 Bouleau, 2007

and milieus to a series of indicators that are poorly representative of the complexity of ecological situations[453].

The WTD offers a contrast to the European approach to occupational safety. It proposes an attempt to turn the government by thresholds into a more complex approach that takes the ecological status of habitats and milieus into account more adequately. This implies that local situations are accounted for in all their complexity. The difficulty that the approach encounters bears witness to the appeal that government by thresholds has for public administrations in charge of monitoring the environment. Governing by thresholds makes it possible to base policy-making on simple quantitative instruments. It simplifies complex realities by rendering them measurable and comparable to one another. It makes it possible to constitute neatly defined technical entities, "occupational environment" or "air", which can then be monitored, however imperfectly.

Governing by thresholds against the market?

By setting constraining limit values for environmental entities, government by thresholds seems to operate against the extension of the market. Instead of making European objects by disentangling entities expected to serve as market objects and to circulate in economic exchanges throughout Europe, it introduces constraints to make sure that the environment meets certain criteria, which may possibly counter the negative externalities of the market. Even if European air, water, or work environment could become European objects, they are objects of a very different nature to those we have encountered so far, which were expected to circulate on the European market. Government by thresholds seems to offer another mode of European intervention whereby, for once, the market is not the vehicle for action, but the force that has to be kept in check, however imperfectly. Thus, governing by thresholds appears to offer another vehicle for integration, whereby the construction of European thresholds would be a path toward a harmonized European environment.

This interpretation should not be the only one though, for the relationships between this mode of government and the market are more diverse, and the politics of thresholds is visible in the situation where policy interventions are directly connected to market making.

[453] Moss, 2008

A first step in this reflection consists in considering that many industrial domains are also regulated by thresholds. The automotive sector has been the topic of numerous European texts setting emission thresholds. Another example is the aerosol sector. It has been regulated by the Aerosol Directive of 1975[454], which defines pressure and flammability thresholds that producers need to comply with. In these cases, the characteristics of the consumer goods are defined by additional environmental criteria. Technical tests on aerosols are coordination instruments for private companies, allowing them to craft collective positions (e.g. about the acceptable pressure level for aerosols) that will then be used to adapt the existing regulatory texts[455].

The same characteristics of government by thresholds that I described above can be identified in the car and aerosol examples. A broad policy issue (for instance the impact of car fumes on air quality) is turned into a matter of measurement of individual entities (e.g. the emission value of individual pollutants). Thresholds are then the outcomes of negotiations involving a plurality of actors, and setting them frequently relies on delegation to the industrial companies. The negotiations during which thresholds are set often involve the concerned companies, and these companies are then in charge of making sure that, for instance, cars respect the emission thresholds, or aerosols have the right technical characteristics. Ultimately, control is required yet remains imperfect. As scandals involving car companies tinkering with measurement apparatus show, delegation is not a binding tie, and might offer a lot of leeway to unscrupulous private actors, even if other regulatory texts explicitly state how the measurements are to be done and the tests conducted[456].

But relations between the government by thresholds and the market can be even more incestuous. One can think of quotas as instruments expected to limit production, particularly in agriculture and fisheries, in order to make markets function. They are ways to translate complex policy issues into measurable matters, and they provide a platform for Member States to negotiate their rights. They constitute a form of European intervention that offers a

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[454] Council Directive 75/324/EEC of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers

[455] Baudrin, 2018

[456] For example in the case of Air Quality, Directive 2015/1480/EC of 28 August 2015 amending several annexes to Directives 2004/107/EC and 2008/50/EC of the European Parliament and of the Council laying down the rules concerning reference methods, data validation and location of sampling points for the assessment of ambient air quality.

kind of flexible control, while delegating much to Member States and private actors. As such, quotas can be described in the terms of government by thresholds. They also have another relation to the market: they can become tradable immaterial entities. Fish quotas, for instance, have been used to manage fish stocks and fight against their depletion. They have been a recurring topic of negotiations among Member States, and have also been turned into exchangeable entities. One of these practices is called "quota hopping", and consists in buying licenses from another Member State in order to obtain the right to the corresponding national quotas[457]. But quotas might also be traded directly, in what is known as "quota swapping", which raises numerous issues about the consequences for the stated goals of managing fish stocks[458]. While promoted by some economists[459] and routinely used in some European policies, policy approaches to natural resources using "rights-based management" have been described as a way of turning the environment into privately owned "rights", with dubious results[460]. My concern here is less about its alleged effectiveness than what it says of the extension of government by thresholds. These mechanisms are designed not only to introduce constraints on market activities, but also to shape new market entities. This is even more visible when considering thresholds related to carbon emissions.

Carbon thresholds

As the global climate issue became pressing, so the need to control carbon emissions became a priority in European policy-making. This priority resulted in the so called "carbon market", known in Europe as the "Emission Trading Scheme" (ETS), and which we encountered in Chapter 4. But the quantification of carbon emissions also illustrates the consequences of turning environmental issues into matters of quantifiable thresholds. Consider for instance the case of biofuels. The Renewable Energy Directive (RED) of 2009 set an overall target for the share of European energy consumption obtained from renewable energy by 2020, and included a target share of biofuels, set to account for 10% of fuel consumption. It also introduced criteria according to which various energy sources, among

[457] Lequesne, 2000
[458] Hoefnaggel et al., 2015
[459] For instance, (Andersen et al., 2009) is a plea for "liberalizing access to fishing quotas within the European Union".
[460] e.g. Boisvert et al., 2004

which biofuels, could be considered "sustainable", and thereby taken into account for the calculation of shares of renewable energy at Member State level[461]. For biofuels, the thrust of these criteria relate to the amount of greenhouse gases produced during the fuel's life cycle, and RED added a series of thresholds related to limit values of carbon emissions[462].

The focus on carbon emissions is not neutral though. It goes with a problematization of environmental issues that makes the quantification of carbon a central task. In the case of biofuels, this has led to lengthy discussions about how to quantify them. It is relatively easy to quantify the amount of carbon emissions resulting from the transformation of a forest into agricultural land (the so-called "direct land use change"). But it is much more difficult to quantify the amount of carbon emissions resulting from the fact that turning land used to produce food products into land used to produce biofuel materials, will cause some other land to be turned into agricultural land for food production (known as "indirect land-use change" issue, or ILUC). Scholars and NGOs have criticized the RED sustainability criteria for overlooking carbon emissions resulting from ILUC[463]. These debates have compelled the European Commission to revise RED – a revision later adopted by the Council and the European Parliament[464]. The revision introduced a 7% limit on the contribution of conventional biofuels (that is, biofuels made out of conventional agricultural products, as opposed to waste and residues) to reach the targets defined in RED. It also proposed that Member States define more ambitious targets for non-conventional biofuels, and asked the European Commission to provide a methodological basis for identifying low-ILUC risk biofuels.

The revised version of RED did not put an end to public controversies[465], but there was never any question that setting quantitative carbon emission thresholds was the problem to solve. This problematization might leave aside non-quantifiable considerations, such as so-called

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[461] This criterion was also meant to be used to identify eligible parties for national tax relief programmes.

[462] Other criteria comprised the type of land used to grow plants for biofuel production.

[463] Overmars et al. 2011

[464] European Commission. 2012. Proposal for a directive of the European Parliament and of the Council amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources; European Parliament legislative resolution of 28 April 2015 on the Council position at first reading with a view to the adoption of a directive of the European Parliament and of the Council amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources".

[465] See e.g. Ahlgren and Di Lucia, 2014

"social sustainability aspects" related, for instance, to work conditions in extra-European agricultural production sites[466]. It also shapes the type of regulatory discussion and the identities of the participants in it, in ways that resemble the politics of environmental thresholds described above. Thus, sociologist of science Les Levidow writes that "arguments about indirect land-use change (ILUC) became an implicit proxy for wider conflicts over the EU's 10% target" of biofuel consumption[467]. This proxy, however, proved deadly for many NGOs, as they failed to campaign on a technical topic that they did not master in detail, and faced adversaries with much more technical resources. Levidow shows that, eventually:

> *The ILUC debate marginalised controversy over 'agrofuel' expansion as inherently driving harm to natural resources and rural populations. The ILUC focus depoliticised those conflicts and reinforced the 10% target. Thus the 'only game in town' played out in reverse of NGOs' expectations for strengthening sustainability criteria, much less [than] for weakening the target.*[468]

Described as such, biofuels seem to tell a story that is now familiar to us. Carbon thresholds are introduced to make them "green enough", and this impacts the type of policy negotiations and the identity of the participants[469]. As in the case of tobacco products (Chapter 3), a market object is harmonized, and the re-qualification of this object extends the scope of European intervention. In this case, it includes industrial policy and – but only as a second thought – environmental policy.

Governing environmental issues by thresholds

Thresholds offer a way of governing the European environment, and, in doing so, of defining its components. They propose to turn environmental issues into matters of measurable quantities. While environmental thresholds are in some cases used to control market externalities, they hold a closer relation to the market in other cases. They are never the outcomes of a would-be centralized European objectivity imagined as a single epistemic authority, but imply that political negotiations are undertaken at the heart of the technical

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466 Mohr and Bausch, 2013

467 Levidow, 2013

468 Levidow, 2013: 219

469 That the type of land used to produce biofuels is not a quantified criterion would not change the overall argument of technicization.

operations that are necessary to characterize environmental matters. The European objects that are consisted out of environmental matters often mix technical issues and negotiations between stakeholders, knowledge production and market organisation: governing by thresholds make European objects political entities.

In all the examples discussed in this section, the European intervention is based on limit value. It results in European objects that are expected to be characterized by measurable characteristics, whether they are related to components of the environment, or, as we just saw, industrial products or tradable immaterial entities. There have been other ways of governing the European environment though, which have attempted to exclude thresholds. In the next section, I discuss a market-based approach to European environmental issues. This approach was explicitly grounded on the idea that no European thresholds of pollutants should be produced, and that thresholds would be the outcome of market operations. But as European interventions based on thresholds articulate expertise and market considerations in ways that do not neatly map on disentanglement and objectivity, the market-based approach we will now examine also redefines what a harmonized European market and what a European expertise might be.

Governing the European environment without thresholds

No threshold but a permit and a market for new European entities

The Integrated Pollution Prevention and Control (IPPC) Directive was passed in 1996. It was subsequently included and extended in the 2010 Industrial Emission Directive (IED). The IPPC and IED do *not* determine threshold levels in European regulation; rather, they introduce a distributed system of permits granted to industries by national "competent authorities" (i.e. their national public administrations) on certain conditions. These conditions are based on the use of technologies for pollution prevention, called "best available techniques" (BAT). The IPPC directive included the following definition of best available techniques, or "BAT":

> - *'techniques` shall include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned,*

- 'available` techniques shall mean those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages (…),

- 'best` shall mean most effective in achieving a high general level of protection of the environment as a whole.[470]

These criteria might seem general, if not vague. While best available techniques became new European objects, they nonetheless lacked precise definition. This, however, would not be contradictory with the objectives of the IPPC directive, which left Member States with the task of identifying what BATs were. It was only after these BATs had been defined by Member States that acceptable limits of pollution would be calculated. Thus, instead of setting thresholds *ex ante*, "emission limit values (…) should be based on the best available techniques, without prescribing the use of one specific technique or technology"[471].

The IPPC approach was explicitly meant as a departure from environmental policies based on European-wide threshold levels. The reasons for this shift were diverse[472], including the objective of adapting to local contexts in each Member State, and of balancing environmental regulation and economic costs. By introducing "best available techniques", the IPPC was indeed an environmental *and* an industrial policy. BATs were expected to constitute a new market, for which the environmental regulation would create a demand, as companies would choose from a range of diverse techniques according to their needs.

These "best available techniques" are themselves defined in entirely flexible ways that are expected to take into account both environmental benefits and economic costs. BATs are determined by Member States, some of which have drawn up guidance documents for this purpose, others not. When they exist, these guidance documents differ across countries, as do the ways used to express emission limit values on permits (e.g. with reference to time periods or statistical methods). Liliana Doganova and Peter Karnoe have proposed a detailed analysis of how the Danish Environmental Protection Agency sought to provide a list of BATs that industrialists could use to be granted an environmental permit[473]. In the particular case

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[470] Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control.

[471] Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control.

[472] See (Héritier, 1996) for an account of the politics of the negotiations that eventually led to the IPPC directive.

[473] Doganova and Karnoe, 2015

of techniques to reduce ammonia emissions from the intensive livestock farming that they studied, they show that this process implied multiple experiments with these techniques, as well as a refinement of calculation methods for both environmental benefits and economic costs. These episodes were hotly debated, as, for instance, farmers' organisations produced alternative calculations, and the companies developing the techniques argued that their costs were lower than the agency had calculated. Overall, Doganova and Karnoe's account shows that the definition of what BATs are is to a very large degree situated, and depends on the various modes of political negotiation in each Member State.

Liliana Doganova and I proposed to describe this situation as being characterized by an objective of "coexistence" of various best available techniques, in which what matters is to "keep things different"[474]. We insisted on the objective of flexibility within the IPPC directive, as visible in the review of the directive that the European Economic and Social Committee produced:

> *The notion of BAT is not rigid, it can actually vary within a sector from one plant to another because costs and benefits can obviously vary. In the Commission's opinion, this is one of the most significant aspects since it allows a balance between different environmental impacts and associated costs. Therefore, the Commission believes that it is important to retain this approach, which entails dialogue between operator and authority.*[475]

For scholars of environmental law, the coexistence of various best available techniques is a problematic situation. The IPPC directive makes both the European environment and the effectiveness of environmental law "increasingly difficult to monitor"[476]. The difference with government by thresholds is certainly clear. Flexibility does not occur in the delimitation or the implementation of the threshold, but stems from the refusal to determine thresholds upfront. The regulatory apparatus is constructed in such a way that no European-wide limits on pollutants can appear. Instead, the limits that are expected to be mentioned on environmental permits are derived from the "best available techniques" used by companies.

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[474] Doganova and Laurent, 2016

[475] European Economic and Social Committee. 2003. Opinion on the Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - On the road to sustainable production: progress in implementing Council Directive 96/61/EC concerning integrated pollution prevention and control, quoted in Doganova and Laurent, 2016

[476] Wennerås, 2007: 44

The implications of an alternative harmonization

Given the situatedness of the definition of BATs, it is not surprising that the issue of their harmonization emerged. If various BATs are indeed meant to coexist, how is the variability that then emerges to be governed? How can they be kept different, yet not so different that they would not be European at all? In the wake of the IPPC directive, various processes were aimed at supervising the definitions of BATs and exchanging information. This came to be known as the "Seville process", since Seville, in Spain, is where a European IPPC Bureau was established. This IPPC Bureau coordinates a network of technical working groups comprising officials from the European Commission, as well as representatives of Member States, private companies, environmental organisations, and research institutions. These technical groups are in charge of producing documents expected to describe the best available techniques. These documents, called BREF (for "Reference Documents for Best available techniques"), are substantial. For instance,

> *the BREF for intensive rearing of poultry and pigs (a 383 page document available on the website of the IPPC Bureau) describes industrial processes, their impact on the environment (type and level of emissions), and a list of techniques (ranging from good farming practice to techniques for storage and on-site treatment of manure), together with the emission levels that they can help achieve and the costs that they are likely to incur.*[477]

BREFs were initially only coordination mechanisms, not meant to be constraining. The 2010 Industrial Emission Directive (IED), in which the IPPC was included, strengthened their status. Article 14(3) of the Industrial Emissions Directive stated that "BAT conclusions shall be the reference for setting the permit conditions"[478]. These conclusions provide the main elements in the description of BATs, and set "BAT-Associated Emission Levels" which regulatory authorities in Member States were supposed to use to validate emission permits

[477] Doganova and Laurent, 2016: 150

[478] BREFs were deemed to be too long and too technical to be translated into all the official languages of the Union. Hence, the directive made the BAT *conclusions* the reference. BAT conclusions are adopted in the form of decisions via comitology, or implementing acts (Vajda, 2016).

and their Emission Limit Values. This means that there are indeed thresholds established at European level. But BATs come first, as thresholds stem from the choice of BATs and the discussions about them. It is only through the use of BATs that permits are granted.

In 2006, 33 BREFs had been completed. Five years after the 2010 IED, the IPPC Bureau was still reviewing them to comply with the new directive[479]. In 2015, seven Commission Implementing Decisions had been released, for the adoption of BAT conclusions on:

- *Tanning of hides and skins (adopted in February 2013);*
- *Glass manufacturing (March 2012);*
- *Cement, lime and magnesium oxide production (March 2012);*
- *Iron and steel production (April 2013);*
- *Chlor-alkali (December 2013);*
- *Pulp and paper manufacturing (September 2014); and*
- *Mineral oil and gas refining (October 2014).*[480]

The slow pace of producing and revising BREFs is a sign of the complexity of the process. There might be many potential "best" technologies in some industrial domains, particularly in industries such as pulp and paper where production is organised in different stages and involves various raw materials of different quality. There, "multiple indicators have to be balanced and consensus is relatively more difficult to achieve"[481]. But, as in many other cases of technical discussions in European arenas, this complexity originates both from the technicalities of the process and from the fact that these discussions are also meant to be political negotiations among the actors involved. This is visible in the overall organisation of the revision process of BREFs, which associates the works of the technical groups with the opinions of a "forum for the exchange of information" created by the Industrial Emission

[479] Amec, 2015, *Service contract for assessing the potential emission reductions delivered by BAT conclusions adopted under the directive on industrial emissions (IED)*, Final Report (3rd Revision), available at: https://circabc.europa.eu/sd/a/44aaf4c4-d716-4f02-91ab-a526b07ee6b7/Final%20report_20150501.pdf, last assessed May 24, 2018: 2

[480] Amec, 2015: 2-3

[481] Katoulakis, 2005: 22

Directive[482]. Chaired by the Commission, its members comprise "Member States, international organisations representing industries (..) and non-governmental organisations promoting environmental protection"[483].

And as the other European expert groups we encountered in chapters 5 and 6, the arenas where BREFs are discussed do not provide an equal access to all actors. Detailed studies of the participation in the technical working groups provide the following results:

> *The vast majority of actors participating in the [working groups] are national government representatives (44.4%). The latter, together with Commission representatives (6.3%), account for approximately half of participants. Individual firms with 19.7% and industrial associations with 18.4% are the second major category of participants. Research institutes with 8.7% and Environmental NGOs are the types of actors with the lowest participation in the TWG workings.*[484]

These "considerable imbalances"[485] have been a topic of concern of environmental organisations[486]. They are tied to a process whereby issues and concerns are transformed into technical matters meant to be examined and negotiated about in the confine arenas of the European expertise.

The IPPC system has been criticized. A line of criticism relates to the fact that private companies have been keen to claim that they use BATs to argue for the environmental performance of plants situated outside of Europe, where none of the other components of the IPPC system exist (such as a competent national regulatory authority in charge of granting environmental permits), with disastrous environmental consequences[487]. Indeed, BATs can function as "best" techniques only if caught in the entanglement of reference documents, national interventions, and European negotiations. But even within this system, the environmental contribution of BATs remains elusive. In a conference organised in 2000

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[482] Article 13 of the IED asked the Commission to set up a "forum for the exchange of information" on industrial emissions. The Forum was established by Commission Decision 2011/C 146/03 of 16 May 2011.

[483] Commission Decision 2011/C 146/03 of 16 May 2011, art. 4. This decision also states that "members of the Commission Expert Group 'Information Exchange Forum on Best Available Techniques under legislation on industrial emissions' (E00466) shall automatically be considered as members of the forum."

[484] Koutalakis, 2005: 15

[485] Koutalakis, 2005: 19

[486] Hey, 2000

[487] (Baya-Laffite, 2016; Conti et al., 2015: 156).

by the European Commission, on the Seville process, experts from environmental NGOs saw the negotiating process through which BREFs were written as counter-productive for stimulating the development of the most innovative environmental technologies[488]. Since then, the evaluations of the environmental performance of the industries covered by the IPPC have been mixed. For instance, a recent evaluation of the environmental performance of dairy industries in Spain (which all had environmental permits as requested by the IPPC directive) found that few techniques among those "available" were actually implemented, and that the emissions of the plant were not always correlated with the use of BATs, possibly because of issues related to implementation, and/or the choice of the most suitable techniques[489]. This does not seem to be an isolated example. The UK Department of Environment, Food and Rural Affairs (DEFRA) assessed the implementation of the IPPC and found that only a minority of the installations it had surveyed had permit conditions compatible with the emission levels stated in the BAT reference documents[490]. The implementation of these reference documents has been found to vary widely across Member States[491].

Independently of whether or not BATs are actually used, and of the variety across Member States in selecting them, the emission limits that emerge from BATs have been regularly criticized by the environmental organisations as being too generous for the industries[492]. Critics have pointed to the calculation method used in BREFs, which expressed emission levels as a ratio of a mass of a given pollutant over an overall volume of emissions. They consider that this concentration approach ignores pollution peaks and favours big facilities for which the overall volume of emissions is large[493]. The list of pollutant emissions included in the IPPC has also been challenged, as some have considered that substances such as persistent organic pollutants or heavy metals should be included in all BREFs[494].

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488 Lohse and Snader 2000, Hägstrom, 2000 quoted in Koutalakis, 2005: 22
489 Lopez et al., 2017
490 Vajda, 2016
491 Maśnicki, 2018
492 European Environmental Bureau 2008
493 Conti et al., 2015: 156
494 Conti et al., 2015

In 2015, an independent academic study of the IPPC "did not find evidence of significant results of its implementation"[495]. It noted the strong influence of the economic crisis on industrial activity, and consequently on emissions. Evaluations commissioned by the European Commission have been unable to connect the decrease in industrial emissions observed during the 2001 to 2010 period with the IPCC and the use of BATs. The IPPC directive was listed as one potential explaining factor among many, such as "additional measures taken at national level" or the economic crisis[496]. This situation of uncertainty should not be seen as a temporary issue that is problematic but potentially solvable. The issue here is not just related to the "availability and quality of existing data", about, for instance, "the level of industrial activity per type of sectors and process", "the split of emissions between the different sub-processes" or "the performance of installations"[497]. It is connected to the flexibility at the heart of the IPPC approach. This flexibility means that different emission limits will be the outcomes of different techniques. And various techniques can be used according to the particularities of the industrial process undertaken by companies. Consequently, BREF conclusions might include different emission levels. Uncertainty is built into the IPPC system, which manufactures an environment that cannot be monitored because of the distributed nature of the regulatory mechanism.

A European environment based on technologies?

The contrast between the system that the IPPC directive introduced and the government by thresholds described in the previous section could not be stronger. Here, thresholds are not determined at the European level, but are expected to emerge from the best available techniques. The European environment that emerges is shaped as a plural landscape, invisible from above but scattered across many local sites. Thus, the IPPC system is a proposition for a government of the environment *without* thresholds that provides a contrast to the government by threshold I discussed in the previous section. But as European regulations based on thresholds, the IPPC system is also based on European interventions

[495] Conti et al., 2015: 153

[496] Amec, 2015, *Service contract for assessing the potential emission reductions delivered by BAT conclusions adopted under the directive on industrial emissions (IED)*, Final Report (3rd Revision), available at: https://circabc.europa.eu/sd/a/44aaf4c4-d716-4f02-91ab-a526b07ee6b7/Final%20report_20150501.pdf, last assessed May 24, 2018: 94

[497] Amec, 2015: v-vi

that are neither purely based on scientific expertise nor the outcome of a delegation to the market. The system that the IPPC directive put in place is "market-based" in that it trusts the market for BATs to come up with satisfactory emission levels. But it is not market-based in the way the carbon market is, or that the market for European green certificates hoped to be (see Chapter 4). In these cases, as in other we encountered in the previous chapters (particularly in chapter 3), market objects were created, they were meant to be standardized, and circulate on a neatly bounded market space. Constituting a new market could then become a way of extending the scope of European interventions to new policy domains. But instead of envisioning standardized European objects disentangled from their local sites of production and use, and a corresponding harmonized market disentangled from policy negotiations, the IPPC system makes the negotiations of these market rules an ongoing activity, as new techniques are hoped to be introduced, and new reference documents need to be produced to describe them. In doing this, it is "market-based", but also implies numerous regulatory interventions at the heart of the functioning of the market[498].

Conclusion

This chapter has discussed European interventions intended to govern the European environment. While government by thresholds is a way of constraining market activities by acting on its negative externalities (pollutants), the IPPC is based on new market objects, the "best available techniques", expected to ensure that pollutant levels are acceptable. These examples both afford an opportunity to identify modes of government of European objects with or without thresholds, and extend our reflection on the long-term perspectives for harmonization.

Government by thresholds is based on the possibility to state what the appropriate thresholds are, based on appropriate scientific expertise. It does not, however, suppose that expertise institutions are distinguished from political negotiations, but instead locates these negotiations at the heart of the establishment of thresholds. Thus, and like regulatory

[498] As they argued in the early 2000s for the need for a European carbon market, the proponents of emission trading considered that the IPPC introduced too much regulatory constraint in the organisation of the market for clean technologies (Lefevere, 2005: 82).

precaution (see chapter 6), it can be described as a manifestation of interested objectivity. The market of best available techniques is not expected to be a neatly bounded market where well-standardized objects circulate. Best available techniques are not completely disentangled from their national contexts, since they are defined by each Member State. The BATs market is also a platform for negotiation among stakeholders. In contrast with what the implications of the objective of disentanglement, and similar to the sustainability schemes designed to certify the sustainability of biofuels (see Chapter 4), the IPPC tightly entangled the organisation of markets with policy making and results in the construction of many "concerned markets"[499]. This shows that the government of environment in Europe is not guided by an objective science neatly separated from policy. It is a hybrid matter, bringing political and economic considerations together, yet in ways that often propose more complex constructs that the mere delegation to a would-be disentangled market. Environmental issues show that harmonization in practice does not use objects for the sake of the pure market or pure science.

The initiatives discussed in this chapter are routinely criticized. These criticisms point to a certain incompleteness of the European government of environmental issues. Those that target environmental thresholds point to the procedural weaknesses of setting thresholds, as corporations with clear economic interests are involved, and technical discussions occur in secluded arenas. The resulting thresholds are often less ambitious than they might have been, and controlling how they are respected is challenging. Some of the criticisms that target BATs and the IPPC system adopt a similar guise, as they lament the reduced roles of civil society organisations or the flaws in control mechanisms. These considerations point to the kind of difficulty we already encountered when examining other technical objects. European objects might become explicit political beings, tied to negotiations about how to organise functioning markets and produce objective expertise, but the processes to make them so still require both a significant institutional work and a theoretical reflection able to re-phrase the principles governing harmonization, for instance by following what notions such as "concerned markets" or "interested objectivity" entail.

This can lead us to two opposed conclusions. The first one consists in considering that Europe has no satisfying way of governing environmental matters, since all regulatory

[499] Geiger et al., 2014

initiatives are hopelessly skewed in favour of the most powerful actors, and the action on and through objects necessarily reduce complex environmental realities into simplified measurable objects (as the critics of carbon accounting remind us). The second conclusion sees European objects as the main vehicles for European action, and potentially powerful tools for conducting European policy in ways that turn technical issues and market organisation into topics for collective negotiations. This latter perspective accepts what European regulation is in practice, and tries to explore how it can provide the instruments to conduct European policies that are both democratically satisfactory and environmentally meaningful. As such, it might offer more practical channels for ensuring that the European project does not leave environmental concerns aside. But one cannot be naïve about European objects at this point. Institutional and theoretical works are still needed to conduct a politics of European objects that would be connected with environmental concerns. And the fact that BATs are criticized for their limited environmental values show that not all European objects can easily connect with public concerns about the environment. While environmental thresholds both simplify environmental problems and render them visible to the eyes of the regulator and those of potentially concerned publics, "best available techniques" remain tools mostly available to companies, and are not designed to provide visible environmental contributions. If one is to consider that European objects can provide meaningful paths for European interventions, then the type of publics and problems they are associated to ought to be analysed carefully.

Chapter 8. Stress testing European objects

Responding to crises

In chapters 5, 6 and 7, we have encountered European objects that re-compose the practice of harmonization. The coexistence of GMOs and non GMOs, the regulation of chemicals through regulatory precaution, and the government of environmental matters with or without thresholds are not based on the idea that a centralized European expertise could provide scientific evaluations neatly distinguished from political considerations. Nor do they try to disentangle markets from political concerns. As such, these initiatives provide perspectives for European harmonization that re-phrase the dreams of disentanglement and objectivity. They do so in ways that are not all not equally valuable, but all prone to institutional instability, if only because they lack recognition as meaningful interventions worthy of political consideration.

This latter consideration has an important implication, namely the fact that Europe regularly fails to build on its own strength, and lacks the theoretical resources needed to re-invent its modes of action in situations when significant reactions are expected. In Chapter 5, I mentioned the case of the European Food Safety Authority (EFSA). This might well be the paradigmatic example of an institutional response to a crisis situation, intended to guarantee public safety at last. But EFSA was construed as an institution that imagined expertise in the terms of the view from nowhere, which ignored the practices of European objectivity and eventually became more a source of controversies than an adjudicator of them. There are examples of this dynamic in other domains. During the Greek public debt crisis of 2009-2010, calls for an objective accounting evaluation of the Greek public debt were regularly heard, and making this evaluation free from what was construed as political influences was a central objective. Yet European accounting working groups, like other European expert groups, operate as platforms for epistemic evaluation and political

negotiations during which the nature of the accounting entities is negotiated[500]. It is only in ignoring this process that the European response to the crisis could introduce constraining interventions on Greek public finance that were sealed off from political discussions, including in Greece itself[501].

European officials and scholars are prone to see moments of crisis as opportunities for furthering European integration. Brexit might be the most recent illustration of this, as negotiator Michel Barnier has been lauded for ensuring that the 27 Member States of the E.U. without the U.K. speak in a unanimous voice, and that the stability of the Single Market has remained non-disputable. But do these opportunities mean that new perspectives for harmonization are envisioned? Or that existing ones are re-stabilized? In this chapter, I examine European answers to two crises: the present financial crisis, and the 2011 Fukushima accident. The first one has been described as an impetus for furthering European integration, while the second one has never been described as such[502]. They were both based on a similar instrument, the "stress test". Stress tests consist in assessing the ability of an entity (be it a bank, a nuclear plant, or any other technical system) to withstand an adverse scenario. Bank stress tests started to be used in Europe in 2009, and European nuclear stress tests were conducted in 2011. I will show that the European reactions to the financial and nuclear crisis turned complex policy problems into a matter of providing objective evaluations of technical objects. In doing so, these reactions indeed further European integration, yet in ways that side-lined wider political issues, and, more often than not, reproduced existing regulatory approaches.

Stating the truth through stress-tests

In Europe, as elsewhere, stress tests are instruments meant to reveal a certain technical reality to multiple audiences, including regulators in need of knowledge for policy action, and publics expected to be convinced that potential risks are appropriately dealt with. The bank stress tests were expected to reveal what the "true" states of banks are, for the benefit of regulators eager to stabilize them, and for that of investors in need of reassurance. The

[500] Lemoine, 2011
[501] Lemoine, 2018
[502] see for instance : Schimmerlfennig, 2018.

nuclear stress tests were defined as a public demonstration of how nuclear plants could handle a catastrophe like Fukushima, for the benefit of both regulators and a supposedly wary European public.

Stress tests are European interventions where the question of objectivity is central. They are expected to provide unbiased representations of technical objects in need of evaluation. They are explicitly associated with a call for "transparency", regarding the true state of the problematic objects at stake. Thus, stress tests are supposed to provide public proof serving higher aims, such as "restoring trust" in the stability of the European financial system, or in the safety of European nuclear power plants. They are instruments that rely on a narrative of trust as the outcome of objectivity and transparency.

These objectives can and have been called into question. As we will see in this chapter, the stress tests were vividly criticized, and their outcomes challenged. Whether or not the stress tests were successful, whether the evaluations they proposed were correct, and whether they did indeed succeed in manufacturing trust have been debated. This shows that the stated goals of objectivity and transparency should not be taken at face value. Accordingly, this chapter asks: what "European objectivity" and what transparency do stress tests configure?

Examining this question requires that one examine the conduct of stress tests, and their subsequent regulatory follow-up. These interventions, like any test in general, focus on entities – banks or nuclear plants – that need to be configured so that they can be tested[503]. Stress tests imply that large-scale matters of concern, such as the stability of the European finance sector or the relevance of nuclear energy, are turned into issues related to the evaluation of technical objects. As such, they constitute European objects – banks or nuclear plants – insofar as they define characteristics for these entities that make them "testable" at a European scale. Thus, the European objects at stake here are entities expected to be governed at the European level, while possibly serving as proxies for large-scale systems that are expected to be controlled. Their definitions engage the understanding of the crisis – indeed the very nature of what the "crisis" is supposed to be about. As such, when how to test banks and nuclear plants is discussed, the crisis is problematized.

[503] The sociology of testing has analysed in details how tests configure the world they are expected to evaluate (Downey, 2007; Pinch, 1993).

For this to occur, a capacity for European intervention on these objects is needed. Making banks or nuclear plants testable requires that a European ability to evaluate the tests be constituted. Stress tests, like any other test and as the sociology of testing has shown, are conducted in front of a dual audience[504]. First, the validation of the test outcomes supposes an institutionalized ability to attest. In the examples discussed here, the stress tests were conducted by private and/or national actors, and then validated by European expert groups or agencies. Second, an external audience is expected to be convinced and reassured by the whole process. This external audience, be it investors in the case of the bank stress tests or a wary "general public" for the nuclear stress tests, is the one expected to regain trust in threatened technical systems. The study of the debates about the publics that are expected to be assembled to witness the conduct or the outcomes of stress tests will help us examine what European interventions were envisaged during stress tests. While stress tests problematize banks and nuclear plants as technical entities in need of objective and transparent evaluation, they also problematize what the appropriate European intervention should be, and for the benefit of whom it should be conducted.

To explore the joint problematization of European objects and European intervention, I examine the elements of stress tests successively[505]. After having described the stress tests and the challenges they encountered, I discuss the European objects they were expected to evaluate, namely banks as individual entities grounded in national economies, and isolated nuclear plants facing natural disasters (and no other risks). I then turn to the ways in which the evaluation of these entities was attested, and discuss the institutional constructs expected to ensure objectivity and transparency. Finally, this chapter discusses the outcomes of stress tests, as they were institutionalized. The bank stress tests illustrate a situation where objectivity is gradually grounded in the intervention of the European Central Bank (ECB). Here, the stated objective of transparency leaves many elements opaque, and significantly extends the power of the ECB. By contrast, the nuclear stress tests pursued existing approaches to nuclear safety as specified in the European regulations, while setting up a distributed ability to attest. In both cases, acting on European objects offers a mode of

[504] Pinch, 1993; Downer, 2007, and, more generally, see the sociology of scientific experiments (Shapin and Schaffer, 1987).

[505] This chapter is based on collective work I undertook with Basak Sarac on nuclear stress tests (see Sarac and Laurent, 2019), and with Basak Sarac and Alexandre Violle on the comparative analysis of the use of stress tests in the nuclear and banking sectors (Laurent et al., 2019).

intervention in times of crisis, which severely restricts the scope of the public concerns related to finance and energy.

How were stress tests conducted and to whom were they addressed?

In finance, stress tests started to be used in the 1990s. They were originally created by economists at JP Morgan, who aimed to anticipate the effects on assets of rare and catastrophic events[506]. Since then, bank stress tests have been used by several banks, based on the same general principle. Crisis scenarios are imagined, such as a fall in real estate or oil prices, or an embargo on raw materials, and the effects of the scenario on the bank's assets are modelled.

After the 2007 financial crisis and the collapse of Lehman Brothers, the Fed decided to use stress tests to reassure investors that US banks were creditworthy. The initiative was welcomed and seen as successful[507]. This made the stress tests even more appealing to European actors, eager to display what the "true" state of banks was[508], as part of a more general "comprehensive assessment" that the European institutions launched in the wake of the financial crisis. The comprehensive assessment also comprised an audit of the European banks, which was the first (and necessary) step for the stress tests to be conducted. The European Banking Authority (EBA), created in 2011 as an answer to the financial crisis[509], and part of a more general project called the *Banking Union*[510], was in charge of running the tests and monitoring the banks. The banks would run their internal models to test the consequences of adverse scenarios, and the outcomes would then be assessed by the EBA. In this context, the stress tests were expected to re-assure investors of the stability of the European banks[511].

The insistence on "audit" ought to be understood within a general concern for an imagined investor worried about the consequences of the financial crisis. Audit is a device of transparency, but not a neutral one. It serves to make certain realities visible and to obscure

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506 Dunbar, 2000
507 Langley, 2013
508 Langley, 2013; Violle, 2017
509 It succeeded the Committee of European Banking Supervisors
510 Violle, 2019
511 Violle, 2017

others, and it frames the entities as being "auditable"[512]. I will get back to a discussion of what it means to make the banks "auditable" in the context of the European stress tests. At this stage, we can already identify a narrative in which the banking stress tests were caught: trust would emerge from an objective and transparent description of what the banks were.

This narrative was also present in the case of the 2011 nuclear stress tests. The reference to the banking stress tests was explicitly made at the time. While the Fukushima catastrophe was still on going, Austrian environment and agriculture minister Nikolaus Berlakovich proposed following the examples of the bank stress tests and organising European nuclear stress tests to "find out how safe nuclear power plants are" [513]. That this proposition came from Austria is not incidental. As a European Member State where nuclear energy was banned in 1978, and strongly opposed since then[514], Austria holds a particular place in the European discussion about nuclear energy. When it comes to issues regarding the nuclear power plants close to its border with the Czech Republic, relations are often tense[515]. We can therefore understand the sensitivity of framing nuclear energy as a European issue, and Berlakovitch's remark. Even if Member States could choose their own energy sources, he considered that nuclear safety was "an issue affecting the whole of Europe. That's why the European Commission must become active."[516]

At European level, discussions about nuclear safety are conducted within the European Nuclear Safety Regulators Group (ENSREG), an expert group operating in liaison with the European Commission. ENSREG was tasked by the European Commission to organise nuclear stress tests. Commissioner for Energy Günther Oettinger saw them as an ambitious check on the safety of all European nuclear plants, possibly leading to some of them being shut down:

> *If we can't imagine shutting down certain nuclear power plants, we can just forget about the stress test right now. With 143 nuclear power plants in the EU, I wouldn't*

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512 Power, 1997

513 "Berlakovich wants nuclear power plants 'stress tests'", *Wiener Zeitung,* 15 March 2011. See: http://www.wienerzeitung.at/nachrichten/english_news/26454_Berlakovich-wants-nuclear-power-plant-stress tests.html, last accessed 2 July 2018.

514 Felt, 2015

515 See for instance a recent account in the media: "Austria and Czech Republic divided over nuclear power", *BBC News.* https://www.bbc.co.uk/news/world-europe-16359991 Last accessed 19 August 2018.

516 "Berlakovich wants nuclear power plants 'stress tests'", *Wiener Zeitung,* 15 March 2011. See: http://www.wienerzeitung.at/nachrichten/english_news/26454_Berlakovich-wants-nuclear-power-plant-stress tests.html, last accessed 2 July 2018.

venture to predict that all will pass. If we apply the highest safety standards, no country can rule out from the get-go that it may have to retrofit or shut down its power plants.[517]

At last, the stress tests would offer a clear view of European nuclear plants. It would make it possible for the European institutions to act, and possibly to close down or retrofit the most hazardous ones.

The banking and the nuclear stress tests, conducted by private and national actors under the eyes of public authorities, were expected to provide an objective and transparent assessment: "objective" in that they would provide an unbiased description of technical objects, and "transparent" in that the results would be publicly displayed. Objectivity and transparency would then re-assure wary investors and concerned citizens that financial and nuclear risks were appropriately governed.

These objectives should not be taken at face value though, if only because the outcomes of the stress tests were contested. In 2011, the Belgium bank Dexia passed the stress tests shortly before going bankrupt – which prompted journalists to quip that the only thing the bank had succeeded in was the European stress tests. The comparison with the American stress tests was then regularly made, at the expense of the European ones[518]. Economists considered that the scenarios used in the European banking stress tests were "too rosy" and "were overtaken by the events in the worsening sovereign debt crisis"[519]. After the nuclear stress tests, national regulators were asked to submit non-binding "national action plans"[520], but contrary to what Commissioner Oettinger had envisioned, the nuclear stress tests did not cause any plants to shut down. This prompted the European Green Party to describe

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[517] "Fukushima has made me start to doubt". Interview with Energy Commissioner Oettinger, *Der Spiegel* 4 April, 2011, http://www.spiegel.de/international/europe/spiegel-interview-with-energy-commissioner-oettinger-fukushima-has-made-me-start-to-doubt-a-754888.html last accessed 6 February, 2019.

[518] Langley, 2013

[519] Anderson, 2016: 8. Writing scenarios is sensitive since including an adverse event in a scenario is an implicit recognition that this event *might* occur in the future. Yet the stability of financial markets also rests on assumptions about which events might occur and which are unthinkable. Thus, including in a scenario the possibility for a Eurozone country to default on its sovereign debt would be interpreted as a recognition that such an eventuality *could* possibly happen. This proved to be a problematic issue for the European stress tests conducted in 2010 and 2011, in the throes of the financial crisis.

[520] Council of the European Union. (2012). Report of the ad hoc group on nuclear security. Brussels: Council of the European Union.

them as "fake" tests that would "only serve as 'alibi tests' so nuclear operators can continue their business as usual"[521].

These episodes seem to characterize the European stress tests as failed attempts at regaining trust. This might well be the case, but, as we will see, we need to proceed with caution before seeing them as "failures". The 2011 bank and nuclear stress tests were followed respectively by other bank stress tests and by a new nuclear directive. These initiatives significantly extended the scope of European action, and I will come back to how they did so. They can be regarded as direct outcomes of the stress tests, which would then be "successful" if seen from the viewpoint of the European institutions. But more fundamentally, whether or not stress tests were "fake" cannot be our question with regard to the narrative linking trust to objectivity and transparency. Instead of starting from the premise that an "objective" and "transparent" evaluation results in the guarantee of trust (meaning that a lack of trust is due to a lack of objectivity and/or transparency), I want to explore what it means for European action to phrase the risk issue in terms of objectivity and transparency. If we are to analyse what kind of European objectivity stress tests build on and produce, then we cannot use the vocabulary of "success" and "failure" as an unproblematic analytical repertoire. An alternative consists in getting into the actual stress tests: what objects do they assess? Who is in charge of assessing them? For the benefit of whom? And what European intervention did they eventually make possible? Answering these questions will allow us to explore the mechanics of building objectivity and transparency, and its political consequences.

Defining banks as individual and national entities

Stress tests evaluate banks, defined by their assets. The audit phase of the comprehensive assessment provided that definition, by describing the assets of European banks. The focus on assets is not to be taken for granted though. It directly comes from a way of considering the value of banks that focuses on the investor looking for future revenue – an approach that is grounded in international agreements such as the Basel Agreements, where the

[521] "Website launched against fake nuclear stress tests", Press Release April 2011, https://europeangreens.eu/news/website-launched-against-fake-nuclear-stress-tests-europe; last accessed 30 September 2017.

standardization of accounting practices makes banks "pure financial market actors, only competing to attract investors by offering them higher risk/return ratios than their competitors"[522]. The abstract objective of "re-assuring investors" is materialized here, as the focus of the comprehensive assessment makes visible the information directly addressed to them. Displaying information about banks through stress tests also implies that their reactions to an adverse scenario are assessed. The American stress tests had applied uniform quantitative parameters (such as: "a 20% drop in real estate prices"). In Europe, by contrast, the general adverse scenario was adapted to each Member State.

To understand what this entailed, we need to examine the ways in which the adverse scenarios were discussed. Economists of the European Central Bank's European Systemic Risk Board[523] proposed general considerations to include in scenarios such as:

> *(i) an increase in global bond yields amplified by an abrupt reversal in risk assessment, especially towards emerging market economies (EMEs), and pockets of market liquidity; (ii) a further deterioration of credit quality in countries with feeble demand, with weak fundamentals and still vulnerable banking sectors; (iii) stalling policy reforms jeopardising confidence in the sustainability of public finances; and (iv) the lack of necessary bank balance sheet repair to maintain affordable market funding*[524].

After 2014, and taking into account the criticisms about the first stress tests, the main variables of the scenarios were eventually the following: a drop in GDP, a drop in real-estate market prices, and a drop in the prices of sovereign bonds. These variables were then translated into national scenarios. Representatives of Member States were engaged in lengthy negotiations at that point, as they were eager to define stress conditions that they considered representative of their national situations. These negotiations were related to which countries should be submitted to the strictest conditions, and whether countries that were already facing problematic situations regarding their financial situations should be tested against the most stringent scenarios. Eventually, Greece and Cyprus, which at the time were in the midst of sovereign debt crisis, had to test their banks according to scenarios

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[522] Baud and Chiapello, 2017: 19.

[523] More precisely of the European Systemic Risk Board which is housed within the ECB and was created in 2010 as a response to the financial crisis.

[524] "EBA/SSM stress test: The macroeconomic adverse scenario", (15/04/2014).

in which the values of their sovereign bonds were much lower than those of other countries. There were other differences for other parameters as well, and Member States attempted in some cases to negotiate for what they construed as the particularities of their situation. For example, French banks did not foresee a sudden decrease of real estate prices, but the designers of the stress tests considered that such events had to be included in the adverse scenario. France eventually lost this negotiation, and this example is just one among the many negotiations among Member States about the scenarios.

Narrating the details of these negotiations and what Member States traded, and for what results, would be a difficult task. But more interesting for our concern here is what these negotiations say of a new European object: the "testable bank". Testable banks were "individual" entities defined by their assets and compared to one another. They were also "national" banks. As they were assessed against a scenario defined according to a national context, they were expected to operate within the national economy of the Member States to which they belonged. In problematizing banks as testable entities in those terms, the European stress tests redefined the crisis that was expected to spur a European reaction. Rather than a global shock affecting the whole economy, it became the addition of adverse parameters in the economies of each Member State. Banks were then made "European" in the stress tests, but in this particular sense. Framing banks as such was not a neutral choice, and it has been contested. Some critics argued that the scenarios had little value if what was to be tested was the next crisis. One commentator put it this way:

> *Stress tests are perfectly useless (…): what one needs to test is not a 5% recession, it's the bankruptcy of Bank of America and JP Morgan. But since they are systemic banks, (…) they will bring all the other banks down with them. So there's nothing to "test". The only thing to do is to eradicate the systemic aspect, that is: separate banking activities, decrease financial speculation, cut down big banks into smaller ones…*[525]

The argument is telling. It consists in considering that if indeed a crash similar to Lehman Brother's was the initial condition, then testing individual banks situated in national economies made little sense, since the overall system would be threatened. This echoes

[525] Berruyer,O. (2014). "La vaste blague des Stress tests de la BCE…" ("ECB's stress tests are a joke") .27/10/2014. https://www.les-crises.fr/la-vaste-blague-des-stress tests-de-la-bce/ Last accessed 4 January 2018.

another criticism, voiced by well-known academic economists who contended in several research papers that stress tests made it impossible to evaluate the systemic effects of any meaningful financial crisis because of their focus on individual banks[526]. These economists[527] argued that the choice of framing banks individual entities assessed according to whether they were capitalized enough had no hope of grasping the conditions of a financial crisis, which they considered as a necessary systemic event.

Problematizing nuclear plants as risky entities threatened by natural disasters

After the Fukushima accident, the nuclear stress tests were not the only policy instrument targeting the safety of nuclear energy. They might however have been the only one that made the individual nuclear plant the central focus. Consider for instance the German decision to withdraw from nuclear power altogether after the Fukushima accident. This decision followed decades of political debate about a potential phase-out and was taken with consideration of a particular national public in mind, sensitive to the nuclear issue and ready to demonstrate its opposition to it[528]. It can be construed as a "political" choice, possibly "political" because of the sensitivity of the federal government to electoral politics in the context of upcoming elections[529], but also "political" in that it was framed as such by the actors involved, both in Germany and elsewhere[530].

Stress tests, by contrast, did not target the role of nuclear power in energy policy, and even less the choice of phasing out or maintaining nuclear power. Energy policy in Europe is

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[526] See: Acharya V., Pedersen L., Philippon T. and Richardson M. (2010). Measuring Systemic Risk, New York University, *Working Paper* ; Acharya V., Engle R. and Richardson M. (2012). Capital Shortfall: a New Approach to Ranking and Regulating Systemic Risks. American Economic Association, AEA meetings, janvier; Acharya V., Engle R. and Pierret D. (2013). Testing Macroprudential Stress Tests: the Risk of Regulatory Risk Weights. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2245211; Brownlees C. et Engle R. (2012). Volatility Correlation and Tails for Systemic Risk Measurement, New York University, *Working Paper*.

[527] Such as Viral Acharya, Sascha Steffen, Robert Engle, Matthew Richardson, Christian Brownlees or Thomas Philippon. Robert Engle was awarded the Nobel Memorial Prize in Economic Sciences in 2003, Viral Acharya became deputy governor of Reserve Bank of India in January 2017.

[528] Glaser, 2012; Jahn and Korolczuk, 2012

[529] See e.g.: "Wähler strafen Union für Atomkurs ab", *Der Spiegel*, 23 March, 2011, http://www.spiegel.de/politik/deutschland/umfrage-waehler-strafen-union-fuer-atomkurs-ab-a-752631.html

[530] In France, for instance; cf. *L'avenir de la filière nucléaire en France. Rapport de l'OPECST*, OPECST, 2011; and particularly the concluding words of MP Christian Bataille, « *choix politique a priori* » - political as opposed to the rational decision. Anne Lauvergeon, then CEO of Areva, was quoted in *Die Zeit* : Auch Frankreichs mächtigste Atom-Managerin, Anne Lauvergeon, bezeichnete den deutschen Atomausstieg als "vollkommen politische Entscheidung" (https://www.zeit.de/politik/ausland/2011-05/atomausstieg-reaktionen-ausland).

primarily a domain of Member States, and the treaties provide little room for centralized European intervention. In recent years, this intervention has mainly consisted in setting non-constraining renewable targets for Member States, and trying to promote cleaner energy through instruments such as the carbon market (see Chapter 4). Problematizing the Fukushima crisis as an issue of the safety of individual plants could then be a way of envisioning a European intervention without stepping outside the limited domain of the acceptable European intervention in energy policy.

Like the bank stress tests, the nuclear stress tests assessed how individual entities (nuclear plants) could withstand adverse scenarios, and similarly like the banking stress tests, writing those scenarios was far from neutral. Scenarios were defined according to the same conditions of stress everywhere in Europe. The technical conditions about seismic events and potential flood conditions were taken into account, following what happened at Fukushima. For all the external catastrophic conditions that they included, the tests were discussed very much in terms of what they excluded. Overall, Greenpeace criticized what it saw as a limited scope of the scenario:

> *The EU Stress test is not a safety assessment of the European nuclear power plants. It is a limited analysis of the vulnerability of the NPPs concerning natural hazards. The accident scenarios are focused on external events, the quality of the SSC* (Systems, Structure, Components) *and its degradation in the oldest nuclear power plants in Europe are not a subject of the analysis.*[531]

The focus on "external events" similar to those that had occurred at Fukushima meant that the stress tests would not consider the degradation of the plant's internal components (the "systems, structure and components" (SSC) in the quote above) as they aged. Ageing has been a regular topic of concern in the field of nuclear safety, and concerns about the safety levels of the oldest nuclear plants in Europe has regularly been voiced by civil society organisations. It is, however, related to the local particularities of the nuclear industry, whether regulatory, social or economic. The problem of ageing is linked to human resources issues, organisational matters within each plant, questions of how to ensure the availability of old technical components, and policy concerns about what is controlled by public

[531] Wenisch, Antonia and Oda Becker, 2012, Critical review of the EU stress tests. Study commissioned by Greepeace, May 2012: 8

authorities. Thus, how to assess ageing is bound to differ significantly across Europe, as the industrial and administrative landscapes vary, as do the policy priorities. Its standardization throughout Europe by a uniform test appears much more difficult than defining a series of external natural hazards in a scenario. In the context of the post-Fukushima stress tests, the scenario based on natural hazards could easily be harmonized throughout Europe. It proposed a certain narrative of the crisis, in which the ability to withstand external catastrophic natural hazards became the only dimension to assess[532]. Accordingly, testable nuclear plants would be technical entities extracted from their local regulatory, social and economic contexts.

The scenario (and associated definition of what the crisis was) excluded another element, man-made disasters, such as the crash of a plane on a nuclear plant. During the early discussions about nuclear stress tests, Germany and Austria had insisted on the inclusion of such events within the scope of the reviews[533]. José-Manuel Barosso, then president of the European Commission, had similarly argued that the tests should be "comprehensive and include the widest range of scenarios, natural and man-made, focusing on their possible impact on the plants' functioning systems"[534].

The eventual scenarios, however, excluded man-made accidents. UK officials claimed that "safety" and "security" were different issues that needed to be treated separately[535]. Treating them separately was also justified by the possibility of making the results of the tests available. The head of the French nuclear safety authority argued that that the Council had set very high expectations of transparency and openness, which could not be met if terror attacks were included in the scenarios[536]. The director of external relations at the trade association for nuclear industry (Foratom) also mentioned this concern for transparency, which he connected to what he defined as a reluctance to "make things political":

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532 On the varieties of narratives of the Fukushima crisis, see: Guarnieri and Travadel, 2018; Hermwille, 2016; Jones et al., 2013

533 Schwartzbrod 2011

534 "Barroso: EU nuclear safety test must cover 'man-made' events", EUBusiness, 11 May, 2011

535 "Europe divided over nuclear power after Fukushima disaster". *The Guardian*, 25 May, 2011.

536 "Deux mois et demi pour les stress tests européens ne serait pas admissible". *Euractiv*, 25 May, 2011

Including terrorist attacks or cyber-attacks as stress test criteria would mean the checks will take more time and authorities won't be able to make the results public…Our feeling is that citizens in Europe are waiting for the results and we should announce them without delays. People don't want to ***make things political*** *and it's important to prove that nuclear plants in Europe are safe*[537].

Here, "not making things political" is directly connected to the possibility of providing results that are expected to be objective ("prove that nuclear plants are safe") and transparent ("making the results public"). The scenarios of the nuclear stress tests, accordingly, were meant to be "technical". The word was used by the Western European Nuclear Regulators Association (WENRA), an umbrella body for the national regulatory agencies of nine Member States and Switzerland which acts as a technical support for ENSREG, as it proposed "an independent regulatory **technical** definition of a stress test"[538].

The use of the "technical" and "political" epithets by the actors involved in the nuclear stress tests says a lot about how they problematize the crisis and the appropriate European answer to it. Rather than critically re-examining the role of nuclear energy policy and the vulnerability of nuclear plants to the broadest possible range of threats, the nuclear stress tests were to focus on well-defined events. This choice re-stabilized a narrative of the Fukushima crisis (a consequence of unforeseen external events) at the expense of others (for instance, a problematic organisational structure of the Japanese nuclear industry, or an intrinsic problem of nuclear energy in the first place). It also framed the European response to the crisis as a uniform evaluation of the same external criteria, which did not require the local adaptation of the scenario (as in the case of the financial stress tests, or if ageing had been included), or a redefinition of regulatory boundaries (e.g. between safety and security).

Who says whether the test is valid, who attests?

Connecting trust with objectivity and transparency implies that an institution is expected to act as a trustworthy examiner of technical objects. The first banking test tests in 2010 and

[537] This was reported by Bloomberg in 2011, and quoted in an online publication of Wise International as part of its *Nuclear Monitor*, « the magazine of the global anti-nuclear community », to point to what critics saw as the narrow definition of stress tests' scenarios (« No fake stress test ! », *Nuclear Monitor Issue*, 13 May 2011, https://www.wiseinternational.org/nuclear-monitor/726/no-fake-stress-test last accessed 6 February, 2019).
[538] WENRA. 2011. *First proposal about European stress tests on nuclear power plants*, emphasis added

2011, which were conducted by the newly founded European Banking Authority (EBA), had been problematic in that regard. An official at the European Commission, involved at the time, recalled them in those terms:

> *In spite of EBA's actions, there was no way to calm the markets down and to recreate trust. (…) You would be told "European banks are not robust", and you would answer "they are, there has been stress tests!" only to hear "yes but stress tests are not credible". What's a credible stress test? One could talk about it, but that didn't solve the problem at the time.* [539]

That the Belgium bank Dexia passed the 2011 stress test shortly before going bankrupt was then seen as visible proof that the European stress tests were not credible. The official quoted above argued that the way to solve this problematic situation had been to redefine who was in charge, so that they became an uncontested authority. The EBA, created in 2011 in the wake of the financial crisis, had to refer to an expert body that could ensure the credibility of the test. The official quoted above told the story as follows:

> *At one point we said 'we need to come out of this situation in a good way' (…). We're in a situation where the only institution which seems really credible is the European Central Bank (…). During the crisis, the ECB was the European institution was made the difference. Whereas European leaders had trouble agreeing among themselves about what to do, ECB and Draghi's famous 'whatever it takes' avoided the catastrophe. There, it was the starting point of our reflections about the unique supervisor.*[540]

Thus, the role of the European Central Bank (ECB) became central in the 2014 stress tests, and in subsequent ones. It supervised the EBA, which then played only a supporting role. The European response to the financial crisis has been described as a movement of centralization and of extension of the European executive power, at the expense of intergovernmental control[541] and even democracy itself[542]. The extension of the ECB's power during the 2014 stress tests can be described in those terms. It was attended by a

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[539] Interview conducted by Alexandre Violle, 23 March 2017.
[540] *Ibid.*
[541] Curtin, 2014
[542] Crum, 2013

redistribution of the loci of political negotiations, as the adaptation of scenarios in each Member States was fiercely debated, and the ECB's supervisory teams had at least one supervisor of a nationality different to that of the bank being assessed[543]. This redistribution still made the ECB the central institution in the production of expertise. In ways that echoed the organisation of expertise as based on the distinction between the production of expert knowledge and decision-making on policy choices[544], an official at the ECB in charge of the bank stress tests described the objective of granting their control to the ECB as follows:

"We needed someone more impartial, and more efficient. We needed to get rid of the somewhat incestuous link between a sovereign state and its banking system."[545]

The source of objectivity and transparency would be the ECB, an organisation already meant to be the epistemic authority on financial matters (cf. Chapter 5).

The comparison with the nuclear stress tests is telling, as no such centralization of expertise occurred in this case. Expertise on nuclear safety was examined at the European level by the ENSREG, which brought together experts from all the Member States (including non-nuclear ones) and the European Commission. The ENSREG operates in ways close to other expert groups that the European Commission uses, both as providers of expert knowledge able to support executive action, and platforms for negotiations among representatives of Member States and private consultants[546]. The ENSREG itself relies on yet another technical body, the WENRA (Western European Nuclear Regulators Association), which is the umbrella organisation for the national nuclear regulators of all the nuclear Member States.

When the WENRA defined the stress tests as "technical" operations (see above), it also considered that it was the expert institution able to validate their outcomes. In its initial proposition, it suggested that each national regulator review the assessment conducted by national nuclear plant operators. There would then be a general circulation of information, whereby each participant country in the Association would see how the others' tests went. This initial proposition resembled what the WENRA regularly does when organising collective

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543 This is a provision of the Single Supervisory Mechanism (cf. Violle, 2019). The description of the European response to the financial crisis in terms of centralization and extension of the European executive power has been nuanced by scholars studying European "experimental governance" (Zeitlin, 2016).

544 Jasanoff, 1987

545 10 January 2018, presentation delivered before a group of French civil servants.

546 Robert, 2010; Vos, 1997

assessments of national regulators' practices. The European Commission did not however see it as satisfactory. Commissioner Oettinger made this clear as he stated that:

> *We will not be sitting in our ivory tower and we will not be naively accepting the results provided by the national authorities. We will be using mixed European teams and we will have the option of visiting the nuclear power plants ourselves. The European teams will be made up of nuclear experts from the various Member States and Commission officials.*[547]

While the WENRA envisioned the test as a collection of national assessments that it could easily supervise, Oettinger proposed that an original European ability to attest be constituted. The ENSREG accordingly organised "European teams" made of experts from both the Member States and the Commission, thus constituting a European way of certifying the validity of the tests. Its specifications of the stress tests ultimately combined "self-assessment" and "peer-review", the latter being a condition for attesting the validity of the former. Who the "peers" were was then a central issue. Would they be, as the WENRA envisioned, representatives of national regulation agencies of nuclear States? Or would representatives of all Member States (including the non-nuclear ones) be included, as non-nuclear Member States such as Austria argued for? The ENSREG defined the necessary conditions to act as "peers" in the following terms:

> *It is understood that any qualified person contracted by a national regulatory organisation to this end is considered as a member of the pertinent national regulatory organisation in the context of the Peer Review mechanism (…). All Members of ENSREG are entitled to propose experts for these Peer Reviews.*[548]

Finally, peer groups would be composed of representatives of nuclear and non-nuclear Member States, and of the European Commission[549]. Representatives of Member States would then participate in the evaluation of stress tests conducted in other Member States.

While the distributed composition of the teams, made up of representatives of diverse

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[547] Gunther Oettinger witnessing before the European Parliament, on stress tests of nuclear power plants in EU and nuclear safety in EU neighbouring countries (debate). Thursday, 9 June 2011, EU Parliament, Strasbourg.

[548] ENSREG. 2011. *Declaration of ENSREG, Annex I EU "Stress tests" specifications*.

[549] Experts from non-Member States who agreed to stress tests (namely Ukraine and Switzerland) were also part of the peer-review teams.

Member States, echoes the network system characteristic of the European Commission's expert groups[550], it also raised an issue about excluded actors, namely civil society organisations. Even though some of them asked to be included in the peer-review process, there was actually no specific mechanism for their inclusion into the peer-review teams. Member States had to compose their delegations, and could then choose whoever they deemed qualified, including civil society experts. Although the European Commission suggested that they include the latter[551], only Austria made that choice[552].

The composition of the "European peer-review teams"[553] can be understood as a compromise. Contrary to the WENRA's expectations, all Member States (and not only those using nuclear energy) sent representatives to participate in the evaluation. Instead of juxtaposing independent national evaluations, the post-Fukushima stress tests were conducted under a European gaze – European because it emerged not from a centralized locus of authoritative vision (as the ECB in the case of the financial stress tests), but from the ENSREG's diversely composed "European peer-review teams"[554]. Yet contrary to what non-governmental anti-nuclear organisations had asked for, it was only through the Member States that the participation in peer groups would be possible. If the nuclear stress tests were made to restore public trust, they did so for the benefit of a passive European public, expected to accept what came out of the process, and not for the sake of a concerned European public, eager to witness it closely.

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550 Gornitzka and Sverdrup, 2008

551 During an interview with a nuclear expert from Greenpeace, 23 March 2017, Brussels.

552 A channel that a Greenpeace nuclear specialist saw as very limited, barely compensating for what he thought were strong pro-nuclear biases in other delegations:

There was a 10 days peer-review session in Luxembourg with doors-locked, and there were only one person with insight from outside the nuclear industry. From the civil society, it was only a former campaigner for Greenpeace who was included in the process. He was the only in Luxembourg that came with that background. He was part of the Austrian delegation. The only delegation that picked up on the suggestion of the European Commission that it would be good to have more stakeholders involved… The Commission saw that it made sense… but there was so much infighting within the national regulators about who will go in there. Helmut Hirsch was balanced out for instance by Attila Aszodi: I would call him Mr. Nuclear in Hungary. (interview, Brussels, 23 March 2017)

553 ENSREG, 2011. *Practical organisation of peer reviews of the « stress tests » of European NPP's*.

554 ENSREG, 2011. *Practical organisation of peer reviews of the « stress tests » of European NPP's*. A Board was put in place to supervise the whole peer-review process. The Board comprised a chairperson for the entire process (France), a vice-chairman (Spain), a full-time project manager ensuring adequate coordination of activities (Czech Republic), three team leaders of "topical reviews" (i.e. specific topics of inquiry for Member States to work on) (UK, Sweden and the Slovak Republic), a representative of a non-nuclear Member State (Austria), and a representative of the European Commission.

The politics of European transparency

Both the banking and the nuclear stress tests articulated attempts at defining the objects at stake and attempts at stabilizing the institutions in charge of evaluating them. Both instruments were expected to achieve an objective of "transparency". The head of the ECB supervisory board described the aim of the comprehensive assessment as "fostering transparency of banks' balance sheets"[555]. Transparency was thus manufactured by making the ECB the central expert actor, able to see what other actors (including the banks themselves) could not, for the sake of a public of investors who could witness only the end results. The fact that expert knowledge requires opacity to produce transparent assessment is well known in various domains of scientific advice for policy-making[556]. The ECB, similarly, has long been engaged in a politics of transparency characterized by actions deemed legitimate because they are the outcomes of expert interventions that remain concealed[557]. The 2014 bank stress tests can be seen as an extension of this approach, as the ECB acquired a significant power of intervention over the Member States and their respective regulatory agencies. In the 2014 stress tests, the ECB used its own model, and contested the banks' internal data. An economist in charge of a risk modelling department in a French bank put it in the following terms:

> *In 2014, the novelty was that ECB came and said 'I know how to build models'. And so I will be explaining to you (…) what I expect from your results. (…) In 2011, the EBA just compared the banks against each other. In 2014, the ECB said "why are your results non conforming to my model?" – without providing any transparency on its own model. Because their transparency is only one way.*[558]

One of the outcomes of the 2014 stress tests was to turn transparency into an asymmetrical operation, in the hands of the ECB. This asymmetry was further developed in that the ECB also acquired the power to force banks to increase their capitalization. It was made possible by a regulatory evolution situated within the Banking Union project, which granted the ECB a

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[555] Nouy, Danièle (2014), "Toward the European Banking Union: achievements and challenges", *OeNB Economics Conference*, Vienna, May 12 2014, available at: https://www.bankingsupervision.europa.eu/press/speeches/date/2014/html/se140512_1.en.html (last accessed 9 August 2018).

[556] Hilgartner, 2000; cf. on economic matters, Grossman et al., 2008

[557] Caporale and Cipollini, 2002

[558] Interview by Alexandre Violle, 12 May 2016.

wider power of supervision of national banks over a national regulatory body, in the context of a "Single Supervisory Mechanism" introduced in 2014[559]. The ECB became an institution able to compare banks to one another, evaluate their situations, identify those that failed the test (8 banks failed the 2014 stress tests[560]), and eventually act on them in constraining ways, by forcing the weakest ones to adopt re-capitalization plans. The outcome of the banking stress tests was a mechanism for transparency that relied entirely on the ability of the ECB to act as an expertise institution able to tell what and where technical issues are, and intervene accordingly.

The ENSREG provides a striking contrast. First, the evaluation based on the European peer review team does not rely on a centralized ability to assess and constrain. The ENSREG's final peer review report concluded that the current standards for risk calculation were not applied in 54 reactors (for earthquake risk) and in 62 reactors (for flooding risk) out of the 145 checked. It revealed that many international standards had not been applied, and recommended several plant-specific "technical improvements"[561]. These conclusions did not lead to constraining European action, and even less so to the closing of nuclear plants. Rather, the ENSREG and the European Commission, prompted by the European Council, asked national regulators to submit non-constraining "national action plans"[562], which would then be subjected to a peer-review process organised according to the rules crafted during the stress tests. Anti-nuclear organisations used the peer-review reports and the national action plans to critically examine the safety levels of nuclear plants[563]. But the transparency of the nuclear stress tests did not mean that these organisations had alternatives to examine the conduct of the stress tests other than by participating in the European peer review teams through the Member States.

A second difference between the transparency of the banking and nuclear stress tests lies in the very definition of "test". The nuclear stress tests defined the objective of "assessment" differently to the banking stress tests. While the banking stress tests singled out problematic

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559 Violle, 2017; Violle, 2019

560 The evaluation reveals a €25 billion deficit for 25 banks (of the 139 subjected to stress tests). As many of those 25 banks had anticipated recapitalization measures, only 8 of them were asked to use 8 billion in equity.

561 ENSREG. 2012. *Peer-Review Report, Stress tests performed on European nuclear power plants*.

562 "Stress tests and Peer Review Process", Joint statement of ENSREG and the European Commission. April 26, 2012

563 See e.g. Becker and Lorenz, 2015a, 2015b

banks that required immediate interventions, the nuclear stress tests were not intended to render the safety levels of nuclear power plants comparable in the eyes of a centralized European body. The transparency of the nuclear stress tests was not about displaying which nuclear plants were problematic; it was never related to a European ability to compare and provide the results of that comparison. This might seem surprising when compared with the bank stress tests, but is much less so when situated within the European regulatory landscape of nuclear safety. As Member States are in charge of the administrative control of nuclear safety, the European intervention acts only at a coordinating level, under the general objective of "continuous improvement". The expression, used in European nuclear directives in European of nuclear safety regulation before 2011[564], points to a form of coordination between nuclear Member States whereby information is exchanged, but no comparison between national safety levels is made. While initially envisioned as a test that plants could pass or fail, the nuclear stress tests were eventually integrated within the existing practice of continuous improvement, which they extended by making the peer review teams "European".

From stress tests to institutionalized European interventions

The banking and nuclear stress tests were more than ad hoc reactions to situations framed as a "crisis". They led to further institutionalization of the mechanisms articulating objectivity and transparency, for which they had been experiments. The 2014 bank stress tests had turned the financial crisis into an issue of ensuring that individual banks had enough capital relative to the respective threats to the economies of their countries of origin. They were followed by others, in 2016 and 2018. These subsequent stress tests confirmed that the ECB had become an expertise institution able to evaluate the European banks and compare them against one another. Yet the most recent stress tests differed in that they were conceived as instruments that were expected to be mobilized *after* rather than *during* the crisis. In 2016, one of the leaders of the consulting firm in charge of

[564] For instance, the 2009 Nuclear Directive stated that: *"The self-assessments followed by international peer reviews are neither an inspection nor an audit, but a mutual learning mechanism that accepts different approaches to the organisation and practices of a competent regulatory authority, while considering regulatory, technical and policy issues of a Member State that contribute to ensuring a strong nuclear safety regime… with the aim of continuously improving nuclear safety".* (Council Directive 2009/71/EURATOM of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations.)

managing the stress tests for the ECB explained the difference between stress tests conducted in "wartime" (that is, during the crisis, as was the case for him till 2014) and future ones:

We know much less about what a successful peacetime stress testing programme should look like. If wartime stress testing is about revealing the capital hole and filling it – i.e. getting capital into the banks – then peacetime must be a state where the hole, credibly sized, has been (or is being) filled, and credibility in both the banks and their supervisor(s) has been restored.[565].

One of the major differences between the eventual "peacetime" stress tests and the previous "wartime" ones was related to their outcomes[566]. Like the previous ones, the 2016 and 2018 stress tests were based on scenarios produced by the ECB and adapted to national circumstances after negotiations among representatives of Member States. But contrary to the previous bank stress tests, the 2016 and 2018 ones did not signal which banks had passed and which had failed[567]; nor did they use limit values beyond which banks were asked to re-capitalize themselves. Rather, they were meant to provide information for the ECB about the situation of the banks' assets[568]. This was a significant development. It turned stress tests into instruments intended to provide the ECB with information about banks' assets, no longer tasked with identifying who passed and who failed.

The proximity with the objective of "continuous improvement" central in European nuclear regulation is visible here. This objective was further rehearsed after the 2011 nuclear stress tests, since "self-assessment" and "peer-reviewing", as they had been conducted in 2011, were institutionalized in the European regulation through the 2014 Nuclear Directive[569]. The 2014 Directive can be read as a stable inscription in regulatory texts of that which could have been an ad hoc initiative taken in the wake of the 2011 catastrophe. It was intended to

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565 Anderson, R. W. (Ed.). (2016). *Stress testing and macroprudential regulation: A transatlantic assessment*., op. cit., p127.

566 Another difference is that fewer people were involved in the national regulatory authorities and in the banks themselves. The ECB became the dominant actor, which had consequences in terms of who used the models and who distributed the results.

567 European banking authority (29 July 2016). 2016 EU wide stress test results.

568 More specifically, they were used to collect information for inclusion in the ECB's monitoring system, known as the SREP (Supervisory Review and Evaluation Process), which is intended to identify banks' annual need for equity.

569 Council Directive 2014/87/Euratom of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations.

integrate the "lessons learnt" from them into the European regulatory body[570], while pursuing the objective of "continuously improving safety"[571]. Self-assessment and peer-reviews had been mentioned in previous European texts on nuclear safety (including the 2009 Directive), but in those texts each Member State was asked to define its own topics for self-examination[572]. By contrast, the 2014 Directive envisioned common issues for all Member States to work on. It stated that "topical peer reviews" were to be conducted at the European level every six years, under the gaze of European peer review teams modelled on the stress tests.

Contrary to the stress tests, the topical peer reviews were designed not to evaluate how nuclear plants could withstand adverse scenarios, but rather to assess the European nuclear power plants according to specifications that would be published by the WENRA[573]. Instead of examining how nuclear plants would react to catastrophic situations, the objective of "continuous improvement" then became reliant on the articulation between self-assessment and peer-review that had been experimented with during the stress tests. The articulation of objectivity and transparency experimented with during the 2011 stress tests was then inscribed in the European regulation, which meant that European intervention on nuclear plants was defined as "technical". This is visible when considering the first "topical peer review", on ageing. As discussed above, ageing had been one of the topics that Greenpeace considered should have been included in the 2011 stress tests. Yet the way it was problematized in the topical peer review was not satisfactory for the anti-nuclear organisation. During an interview, a Greenpeace nuclear expert described this choice as "technocratic", in that it reverted the definition of the entity expected to be assessed to national regulators, defined "ageing" as a set of isolated technical issues, and thereby

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570 "In view of the technical progress achieved through the provisions of the IAEA and by the Western European Nuclear Regulators Association ('WENRA') and responding to the lessons learnt from the stress tests and the Fukushima nuclear accident investigations, Directive 2009/71/Euratom should be amended to include a high level Community nuclear safety objective covering all stages of the lifecycle of nuclear installations (siting, design, construction, commissioning, operation, decommissioning). In particular, this objective calls for significant safety enhancements in the design of new reactors for which the state of the art knowledge and technology should be used, taking into account the latest international safety requirements". Council Directive 2014/87/Euratom

571 Council Directive 2014/87/Euratom

572 Council Directive 2009/71/EURATOM of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations.

573 WENRA. 2016. *Report Topical Peer Review 2017 Ageing Management Technical Specification for the National Assessment Reports*. RHWG Report to WENRA, 21 December 2016.

rendered the overall examination of plant ageing (including e.g. considerations related to their economic value, the increasing terrorist threat, or the variety of sociotechnical solutions) impossible to discuss[574]. As self-assessment and (European) peer-reviewing were enshrined in European law, so the transformation of the post-Fukushima situation into an issue related to the technical management of the individual nuclear plant appeared definitively successful, much to the dismay of critics such as Greenpeace.

Conclusion: normalizing the crisis

The banking and nuclear stress tests shared a narrative of trust being the outcome of objectivity and transparency. Both terms, however, translated into different operations. In the nuclear case, objectivity meant that the nuclear energy issue was turned into a matter of examining nuclear plants defined as "technical" entities, not meant to be comparable to one another and intended to progress in a process of "continuous improvement". Transparency relied on the mobilization of European peer-review teams, and on the publicization of the results for the benefit of a general public expected to trust the outcomes of the process. The banking stress tests proposed a version of objectivity where banks were described as individual and national entities defined by their assets. After the initial difficulties that the banking stress tests encountered, the European Central Bank became the sole expertise institution in charge of evaluation and constraining intervention. Objectivity and transparency would be realized by the ECB, for the benefit of investors eager to know the true state of banks' assets.

We can now further develop our exploration of European objectivity started in Chapter 5. The differences between the ECB and the ENSREG's expert groups echo the opposition discussed in Chapter 5 between a would-be centralized European ability to evaluate technical objects (of which the ECB is the prime example), and the frequent distributed practices of European expertise that can be described as manifestations of interested objectivity (of which ENSREG and the European peer review team provide yet another illustration). The ECB is a very particular case, perhaps the only one within the rich landscape of European expertise where the European institution has the ability to act as an

[574] Interview conducted by Basak Sarac, Brussels, 23 March 2017.

authoritative expert institution, in charge of defining and governing European objects, and able to determine that which is made public and that which remains opaque.

In times of crisis, the need for European objectivity is re-affirmed. This has consequences, particularly in domains where European policy can exercise constraining power by virtue of a centralized epistemic authority. The case of the nuclear stress tests offers an alternative proposition for European objectivity, in which the ability to tell what objects are is distributed. In both cases, however, stress tests functioned as "object-ification" operations, in that they turned large-scale policy issues into matters of technical evaluation of European objects. The financial crisis was redefined as a threat to individual banks' assets because of particular conditions in national economies. Individual and national banks became regulatory targets, to the dismay of the critics of the existing financial system. Anti-nuclear organisations sought to critically examine wider issues connected to nuclear safety, such as ageing or terrorist threats, if not the relevance of nuclear energy all together. But these concerns were carefully side-lined throughout the nuclear stress tests.

The European interventions conducted in the wake of the financial and nuclear crisis reveal an ambivalent, if not utterly unsatisfactory situation. Crises are narrated as impetus for greater and more coordinated European actions, and possibly for extending the European project to new domains such as financial stability or nuclear safety. But the institutional constructs that ultimately emerge from stress tests prevents any significant re-imagination of the European way of acting in both finance and nuclear energy. "Objectivity" and "transparency" mean that crises are "normalized" in the dual sense that their outcomes enter the realm of the normal, and that their consequences are governed by norms that eventually re-stabilize existing regulatory choices (as in the nuclear case) or extend what already existed (as in the case of the bank stress tests). European objects are both a vehicle for this process, and an outcome of it. After the financial and nuclear crisis, the broad political issues of the stability of the European financial system and the relevance of nuclear power for energy policy turned into a matter of governing technical objects.

That the crisis provides an impetus to strengthen European integration has become a commonplace observation in European studies. The euro crisis has been discussed as such. It has indeed led to deepen the European scope of intervention in national policy choices and economic activities. This chapter forces us to be cautious about the effect of the crisis

though. The answer to the crisis may adopt the language of objectivity by excluding objects from political discussions. By contrast, the definition and evaluation of technical objects might become topics of negotiation, and explicit political issues. This was the case in the nuclear stress-tests, but soon the negotiations resulted in the elimination of broader definitions of nuclear plants and their risks, and in the exclusion of the most critical actors. While the European answer to the financial crisis further reinforced the power of the ECB and further isolated European objects such as banks and the euro itself from political discussions, the answer to the nuclear crisis extended the existing practice of continuous improvement with little consideration for alternative propositions emanating from concerned publics. This leads us to re-phrase the nature of the crisis and the opportunity that it might provide for furthering European integration. Crises might be opportunities for furthering European integration, but they are ambivalent ones, always prone to normalization processes that eschew broader issues and unruly concerned publics. A deeper crisis in Europe might well be caused by the inability to connect the examination of technical objects with the representation of collective concerns.

Conclusion: A constitutional problem

The previous chapters have told stories of conflicted attempts at harmonization. Chapter 2 and 3 have shown the power of the dream of the disentangled market, and how it translated in constraining interventions on standardized objects. These interventions have proved to be crucial resources to extent the perimeter of the European power to act, in domains as diverse as food, human health or finance. They face regular criticisms, and one of the reasons why is that the dream of disentanglement functions on the hypothesis that the technicalities of market organisation (as they occur in standardization) can be isolated from political concerns. This hypothesis is often questioned, and in some cases, directly challenged by the very characteristics of the objects at stake. The example of energy discussed in chapter 4 has demonstrated that the materiality of certain objects challenges the very possibility of disentangling markets. The following chapters have shown that the scientific evaluation of technical objects, particularly in relations with the risks they raise or are subjected to, has been a pervasive quandary for the European institutions. The reference to the market has provided legal and institutional resources for conducting European policy. By contrast, science has proven to be much more problematic. While the dream of an objective science neatly distinguished from political considerations is regularly formulated, and can be identified in the case of the economic expertise of the European Central Bank, it has little to do with how technical objects are practically dealt with by the European regulation.

By some respects, one can conclude from the previous discussions that there are important discrepancies between the stated objectives of harmonization and the practice of dealing with European objects. But one can pursue the analysis further, by exploring what the study of European objects and their problematizations can bring to our understanding of the European project. This is no regular time for the European Union, as the United Kingdom is about to leave, and Eurosceptic parties are on the rise. In these concluding pages, I argue that the reflection on European objects can help us make sense of this difficult situation, and possibly envision paths forward. To do so, I come back to the ways in which the interventions that I described in the previous chapters envision the public in the name of

whom they are conducted. I will discuss how European objects lead to certain types of political subjects, exclude others, and possibly offer opportunities for the emergence of new ones. This will lead me to discuss constitutional issues. I use the term not to point to a written text that would serve as a European Constitution – the attempt to pass one has been a remarkable failure – but to analyse the ways in which European institutions define the conditions of their legitimacy. If the dreams of disentanglement and objectivity tend to situate objects beyond the perimeter of political deliberation, other approaches to European objects make them explicit political entities. How to undertake a constitutional reflection from the latter is a challenge that deserves to be met, as these final pages will discuss.

The Economic Constitution and the dream of disentanglement

In 2005, the proposed European Constitution failed after France and the Netherlands rejected it through popular votes. Since, then, the known mechanic of the treaties has replaced any constitutional ambition that the Union might have had. Scholars had been speaking about an unwritten constitution of European for years though. The terms "economic constitution", which I introduced in chapter 2, have been used to describe a form of social and political ordering that is the sources and the desired outcome European integration. Legal scholar Christian Joerges explains that the unwritten "economic constitution" bases the European project on "the legal ordering of the economy, the economic freedoms of the ECC Treaty – a system of undistorted competition – and an economic policy 'complying with judiciable criteria'"[575]. The economic constitution is an imagined collective order, inspired by German ordoliberalism[576], whereby European integration stems from well-functioning markets, economic policy is carefully distinguished form social policy, and Member States accept that the organisation of the European markets falls beyond the perimeter of national sovereignty. This is an originality of the European institutions, and a crucial element of their differences from nation states. Within the economic constitution, the beneficiary of European integration is a consumer benefiting from the increased choices and lower prices of effective competition, or a producer able to

[575] Joerges, 2014 : 986
[576] See Gerber, 1994

freely participate in market exchanges because of vanishing trade barriers. If there is such thing as a European citizen, she is, within the economic constitution, an economic agent.

Since the expression "European citizenship" was introduced in the 1992 Maastricht Treaty, the content of this citizenship, and the rights and duties it conferred have puzzled policy analysts and legal scholars. These debates have underlined the enduring strength of a notion of citizenship based on economic rights, what is sometimes described as a "market citizenship", and which would be about the ability to produce and consume market goods and service[577]. Understood in those terms, European citizenship is closely articulated with the European objects that are market entities. The more recent extension of citizenship law in Europe has not significantly rewritten this market basis. Legal scholar Loïc Azoulai has shown that the European Court of Justice has relied on economic freedoms to define individual rights[578], even as citizens' rights have become an explicit concern of the European institutions. As Azoulai says, "the development of the legal regime of European citizenship has been conducted under the forms and according to the methods of the legal domain from which it claims to liberate itself, namely the law of the internal market"[579]. Accordingly, the legal proceedings at the ECJ about citizenship's rights refer to the freedom of movement and non-discrimination as grounding principles. What matters in the eye of European law is the ability to make all citizens "European", and able to act as equivalent economic agents throughout Europe.

Our reflection on European objects provided illustrations of the economic constitution, and shows that problematizing European objects often means imagining an economic agent as a crucial contributor and ultimate beneficiary of European interventions. The most telling example was perhaps that of the CE-marked consumer products, which I discussed through the case of the construction products in chapter 2. Here, the attempt at harmonizing European markets is conducted through product labelling and for the benefit of an imagined figure, that of the individual economic agent, either a consumer eager to ponder her choices using the information provided by the labels, or a producer putting new products on the market. Other cases I discussed also provide illustrations of a political subject understood as an economic agent. In chapter 3, we saw that when the protection of local food products

[577] Reich, 1997
[578] Azoulai, 2011; see Reich, 1997
[579] Azoulai, 2011: 547, my translation

was intended as an engine for rural development, then the farmer was to be turned into an entrepreneur able to benefit from the value of her geographical position. In chapter 4, I discussed how the European interventions seeking to disentangle a market for energy imagine a rational economic agent able to make cost-benefit calculations to ponder what to buy and what to produce.

One can extend these explorations to European interventions targeting human beings and turning them into circulating economic entities expected to circulate on the European market. Consider for instance the case of posted workers. The topic has been debated since the mid 1990s, and has opposed the European Commission and Member States. The former has been eager to ensure the free circulation of services, which includes the circulation of the workers themselves, expected to be able to work across the Union. The latter have been reluctant to dilute national frameworks of workers' rights for the sake of a harmonized market of services. Early court cases gave the upper hand to member states, as they interpreted the 1996 Posted Worker Directive in such ways that the host state regulations were the most important[580]. The subsequent legal disputes and what legal scholars have labelled the "new approach" of the European Court of Justice nuanced this interpretation though[581]. Within this new approach, the minimal conditions that posted workers must meet in the country where they work, including for instance, working time or minimal wage, must be known and respected. But what these "minimal conditions" are is often controversial, particularly in areas where collective agreements between unions and industrial organisations define more restrictive working conditions than what the national legal framework lists. Take for instance the case of the Lindsey strike, in Britain, which in 2009 became famous for the motto "British jobs for British workers". The unions calling for the strike had concerns about whether foreign workers were provided with the same working conditions (e.g. a paid tea break, included preparation time, daily travel allowances) as those defined in collective agreements that were more favourable to workers than the national regulation. The unions saw these discrepancies as sources of "unfair competitive advantage"[582]. This episode is telling. It confronted in all too visible ways would-be European individuals expected to be disentangled from local conditions of work and local ones eager

[580] One of the most famous case is *Rush Portuguesa* (Davies, 1997)
[581] Kilpatrick, 2009
[582] Barnard, 2009: 258

to operate within a social space defined by protective regulations. The middle-ground position crafted by the European Court of Justice as it interprets the Posted Worker Directives supposes that it is possible to unproblematically lists working conditions. It imagines that each Member States lets its local working conditions known, which eventually can organise a fair space of competition at the European level. But in many cases, collective agreements result in significant variety across industrial sectors (so much so that certain member states such as Member States entirely rely on collective bargaining to define minimal wages). Yet, as a legal scholar remarked, the new approach of the Court "displays a tendency to deal with the existence of normative pluralism in labour standards by restricting and suppressing it"[583].

These considerations about the European law of posted workers show that many of our discussions of European objects can be extended to European initiatives targeting human subjects. Posted workers are expected to be disentangled from their home country and work elsewhere, circulating in an imagined well-organised European space of competition. As we saw in chapter 2 with the example of CE-marked construction products, this results in tensions with local conditions. The imaginary of the disentangled market at the heart of the economic constitution is only painfully realized. Yet it remains a common reference, including in situations, such as energy or labour, where it faces pervasive difficulties. As we understood in chapter 3, the strength of the reference of the disentangled market is also that of the legal instruments made available to the European institutions. Standardizing market objects has proven to be a lever of action for attempting to reach policy goals that went far beyond the perimeter of market harmonization. We saw that rural development, human health or financial stability were objectives of the standardization of geographically labelled food products, tobacco products, and credit-default swaps, which found its legal grounding in the harmonization of the Single Market. When human subjects become disentangled market entities, as posted workers, then they become instruments used as proxies for conducting a *de facto* European labour policy[584].

The pervasiveness of the dream of the disentangled market is revelatory of the continuous strength of the economic constitution, even as its practical realizations face numerous

[583] Kilpatrick, 2009: 4

[584] The convergence of national labour policies is an explicit objective of the posted workers directives (Barnard, 2009).

challenges. It also signals its ever more visible consequences in terms of democratic accountability, and consequences for the protection of local practices. The motto of the Lindsey strike "British jobs for British workers" can then be read less as a nationalistic call excluding foreigners than a reaction to the European attempts at harmonizing the market of circulating posted workers in ways that cannot integrate the diversity of local labour conditions.

Can the economic constitution deal with scientific issues?

For all the persisting strength of the dream of disentanglement, the ordoliberal project of the Treaty of Rome has radically evolved, and so much so that legal scholar Christian Joerges wrote a "melancholic eulogy" to it in 2013[585]. Joerges argued that the ordoliberal project had been strengthened by the Monetary Union and the Stability Pact, which pursued the integration of the European economy while still leaving redistributive social policies to Member States (yet with more and more constraints). But he also considered that the extension of European law to several regulatory fields radically re-defined the principles and modes of action of the economic constitution. Joerges wrote, speaking of Jacques Delors' project of "completing the Single Market" and the 1992 Maastricht Treaty:

> *What had started out as a collective effort to strengthen Europe's competitiveness and accomplish this objective through new (de-regulatory) strategies soon led to the entanglement of the EU in ever more policy fields and the development of ever more sophisticated regulatory machinery. It was, in particular, the concern of the European legislation and the Commission with "social regulation" (health and safety of consumers and workers, and environmental protection) which proved to be irrefutable. The weight and dynamics of these policy fields had been thoroughly underestimated by the proponents of the "economic constitution*[586]

What Joerges labelled "social regulation" (in quotes) refers to the many European interventions based on objects that we examined in the previous chapters, and which constitutes the "sophisticated regulatory machinery" that aims to ensure the "health and

[585] Joerges, 2013
[586] Joerges, 2013: 19

safety of consumers and workers" and "environmental protection". In this piece however, Joerges does not explore the modalities of the regulatory machinery, but discusses new modes of European governance, such as the "open method of coordination", which is based on continuous self-evaluations and exchanges of information about the performances of Member States. These approaches, usually subsumed under the terms "democratic experimentalism" make non-constraining coordination and self-improvement central engines of European integration. Like others, Joerges points to the accountability and transparency issues that these approaches raise[587]. Thus, Joerge's eulogy to the economic constitution is "melancholic" in that it diagnoses both its profound re-definition and the inability of European institutions to make alternative constitutional arrangements explicit, or to propose alternative approaches to decision-making that would re-invent the constitutional basis of the Union in satisfactory ways.

The previous chapters can be read as explorations of empirical variations of this latter reflection. Yet the examples I discussed focused on what Joerges made only a passing reference to, namely the "regulatory machinery" that acts on technical objects, and which, as Joerges suggests, significantly challenges the neat ordering that the economic constitution imagines. They do so because they introduce technical issues in the midst of the organisation of the market, in ways that force to introduce explicit political concerns in market-making, as the case of GMOs and the current policy based on coexistence which I discussed in chapter 5 illustrate particularly well. In chapter 5, I built on this example to demonstrate that the economic constitution could not easily add a scientific component. Although the dream of an objective science neatly distinguished from political considerations remains attractive, and actively formulated at the European Central Bank, technical issues are rarely, if at all, governed by adding a centralized European expertise able to function independently from negotiations with concerned actors. If there is such thing as a European objectivity, it cannot be phrased in the terms of the view from nowhere but rather in those of what chapter 5 called "interested objectivity". Thus, the European objects related to health, safety or the environment provide illustrations of the "regulatory machinery" that end up displacing the economic constitution. They extend what the case of energy had already illustrated, as environmental and political concerns made it impossible to

[587] The Open Method of Coordination has been the topic of numerous scholarly works. See for a review: Borras and Jacobsson, 2004, and for a critical discussion Bruno, 2009.

disentangle markets of immaterial entities carrying the "green" value of biofuels or electricity (see chapter 4). A telling example discussed in chapter 6 is that of the precautionary principle, inscribed in many European texts, and which translates in "regulatory precaution" whereby chemicals are governed according to a case-by-case approach. Other illustrations comprise the hybrid political and economic arrangements whereby diverse biofuels or "best available techniques" coexist across Europe, and the processes whereby environmental concerns are turned into technical entities described and governed by thresholds.

That the regulatory issues linked with technical objects and the risks they cause or are subjected to spur original regulatory constructs can be related to the political issues raised by science and technology. These issues pertain to questions such as: how to trust experts? Who should participate in decision-making? What are the public facts on which sovereign power can act? These interrogations relate to the political subjects in the name of whom policy choices are made, and who is expected to participate (or not) in decision-making processes. Thus, science and technology often lead to "constitutional moments", in Sheila Jasanoff's terms, that is, situations when both the principles according to which public institutions are expected to function, and the ontological nature of the technical entities at stake are challenged[588]. By many respects, this is what happens in practice in European regulatory circles, as political negotiations, market organisations, and the evaluation of technical objects are brought together to conduct regulatory precaution, setting environmental thresholds, or discussing the conditions of coexistence between GM and non GM organisms. In these situations, the European citizen is envisioned in ways that do not define her in pure economic terms, and do not necessarily make her a passive subject expected to trust experts operating outside the domain of politics, as the dream of objectivity would have it. The political subjects that the government of technical objects convoke are often economic ones, yet not the simple rational consumer or producer that the economic constitution imagines. The case-by-case approach at the heart of regulatory precaution, the settings of environmental thresholds and the definition of best available techniques all rely on the integration of actors who have economic ties to the issues at stake, and the hybrid processes that govern European technical objects are the sites where

[588] Jasanoff, 2011

lobbying activities are exercised. Controversial objects have also led the European regulation to take concerned publics into account. Coexistence functions on both economic agents choosing the type of food products they want to buy or produce, and concerned subjects ready to make sure that the development of GMOs is either limited or promoted. Other examples have provided illustrations of political subjects that were problematic because of the uncertain extent of their involvement, as in the case of the nuclear stress-tests, for which the participation of civil society groups was both called for and channelled through Member States (see chapter 8).

The corresponding European interventions have to deal with the particularities of the objects themselves. We saw that the materiality of energy flows, the diverse ways of defining chemicals, or the various possible indicators to use when assessing natural or occupational environments have consequences for how corresponding European interventions are conducted. The practical regulatory innovations that follow do not refer to the dream of objective science, and significantly re-write that of the purified market neatly disentangled from political considerations. They might well be vehicles for "constitutionalization in process", in Joerges' terms, meaning that they do not lead to "the writing of a text and its formal acceptance"[589] but relate to actual regulatory practices and their effects in terms of how decisions are made and on what normative basis. Yet the European interventions that re-write the dreams of disentanglement and objectivity also regularly result in a distribution of power that is uneven at best. The participation of civil society groups in complex regulatory processes is a recurring issue. A deeper issue is the persistent difficulty, present in many of the cases discussed in the previous chapters, to clarify the objectives being pursued (why prioritizing this or that chemicals? what are GMOs for?) and, possibly, opening them up to public debate.

This complicates the picture of the economic constitution. The examples analysed in the previous chapters show that it is significantly challenged by European objects, yet by no means replaced, or completed by a "scientific constitution" that would result from a consistent approach to dealing with technical issues. To be fair, there are contemporary propositions for rethinking the articulation between science and the political life that may have constitutional consequences. The current program of "responsible research and

[589] Joerges, 2013: 36

innovation" (RRI) in Europe stems from a self-diagnosed problematic relationship between science and European societies[590]. It originated from science policy programs supporting emerging technologies such as nanotechnology. It consists in promoting a loose set of "European values", and closer relationships between scientific research and the European publics. But it is also regularly criticized for failing to integrate public deliberation in the setting of research priorities, and even less so in the determination of what technical objects should be put on European markets and what should not. In other words, if science policy, however "responsible" it is claimed to be, is carefully distinguished from other policy domains, such as the regulation of markets or public expertise related to risk, then there is little hope that it can meaningfully contribute to the needed constitutional work.

Constitutional questions

The everyday experience of Europe continues to be either that of a far-away bureaucracy imposing seemingly arbitrary constraints, or that of persistent concern for market liberalization and tightly controlled public spending. Seen as such, European integration is the product of a regulatory machinery that seems to function for the sole sake of elusive dreams, that of a disentangled market and that of a purified objective science, that are either irrelevant to the everyday concerns of European publics, or solely pursued for the sake of the few actors benefiting from them.

Yet the previous chapters have shown that these dreams of harmonization are more complicated in practice, and in effect rarely realized. This is particularly the case of the dream of objective science, as I just discussed. In practice, the regulation of technical objects that are problematic because of the risks they raise or are subjected to often mixes scientific evaluation, political negotiation and market organisation. The dream of disentanglement is much more powerful, and grounded in a well-established legal framework. Yet technical objects have challenged it as well. That energy is a flow of electrons or molecules makes it particularly hard to extract from its local context of production. Hazardous waste have forced European actors to question the extent to which risky entities could be turned into

[590] RRI has been discussed in a growing set of literature, for a genealogy and a critical analysis, see de Saille, 2015. I discussed in (Laurent, 2016) how RRI builds on previous nanotechnology programs to propose a vision of joint democratic and scientific progress. One can situate RRI within the more general evolution of how European science policies envision the relationships between science and its publics (Felt, 2010).

market objects, or should be excluded from the Single Market. The controversies about Genetically Modified Organisms have resulted in a policy based on co-existence, which integrates political considerations at the heart of the European market, as, for instance, Member States can use safeguard clause in spite of the opinion of the European Food Safety Authority.

The situation as it emerges from the previous chapters seems to be characterized by an oscillation between two poles: that of the pervasive yet imperfectly realized and democratically problematic dreams of harmonization; and that of the isolated initiatives that challenge these dreams, in ways that are routinely criticized and are never exposed as being steps for a renewed European project. There are two possible readings of this situation. The first one sees in it the manifestation of a hopeless mechanism that transforms large-scale problems into matters of object-making. In this reading, the oscillation between the pervasive dreams of harmonization and the initiatives that challenge them is barely meaningful, since the European machinery will end up de-politicizing public problems, either by explicitly excluding them from the domain of the political (when objects are governed as disentangled market products or technical entities seen by objective science), or by crafting regulatory processes that are so complex that they are *de facto* reserved to experts, bureaucrats, and skilled lobbyists. The examples I discussed in chapter 8 might provide the most relevant motivations to adopt this reading. The analysis of banking and nuclear stress tests showed that European answers to crises turned crucial political issues such as the public control of private finance or the role of nuclear power in the energy mix into matters of object-making. This first reading is pessimistic about the future of European construction, since it leads to either wishing for a political upheaval able to rephrase the entire process of European regulation (but conducted by whom?), or getting rid of the European project altogether.

The second reading is more optimistic, and seemingly more modest. It consists in considering that making and regulating technical objects are what Europe knows how to do, the main vehicles through which European policy is conducted, and possibly related to numerous pressing concerns of contemporary societies, be they related to the environment, human health, or consumer needs. In this second reading, European objects are also the practical manifestations of European policies, and potential entry points for re-thinking the

all too general dreams of the disentangled market and purified science. Understood as such, European objects deserve careful consideration in order to make them entry points for a renewed European project.

This is at this point that the second reading is far more ambitious than it seems, and, I argue, ultimately epistemologically more satisfactory (as it accounts for the actual practices of harmonization) and politically more relevant (as it builds on Europe's own resources to extend the European project). If we adopt the second reading, then we need to undertake a work that is constitutional in the deepest sense of the term. This work has several dimensions. On the theoretical level, it requires considering that the definition and regulation of European objects are political operations, and not outside of politics as the dream of pure market and pure science would have it. This has at least two consequences on the institutional level. First, asymmetries need to be corrected in terms of who has accessed to the sites where objects are problematized. Examples of these asymmetries abound in the cases we encountered. We saw that the proliferation of technical negotiations required by regulatory precaution automatically excluded actors with fewer resources (chapter 6), or that the fragmented landscape of diverse green certificates provided much leeway to unscrupulous companies eager to benefit from differences in taxation systems (chapter 4). Second, and perhaps even more challenging, taking the constitutional strength of European objects seriously requires elaborating a politics of representation based on objects. We saw that European policies have the ability to turn public concerns related to chemicals, the environment, human health, or energy sources, translate into regulatory discussions about technical objects. The crucial issue is then to ensure that the identification of these concerns takes the diversity of actors for whom objects matter into account. This might lead to consider that certain objects are more desirable than others, for instance environmental concerned defined by thresholds and thereby rendered visible to the eyes of concerned publics, rather than "best available techniques" whose environmental performances are uncertain by design.

From materiality to European objects that matter

An even more ambitious step is then to consider that this perspective offers resources to rethink the role of the European political subject according to object-related concerns. On

this point one can build on the works of STS scholars such as Noortje Marres, who analyses citizen engagement processes tied to the materiality of the mundane objects that connect individuals with larger issues[591]. Marres' perspective sees public participation not as an answer to the "problem of extension", which would consist in including an ever larger number of participants in decision-making processes, but as a way of addressing the "problem of relevance", for which the important democratic issue is to ensure that those who are troubled with certain issues can voice their concerns[592]. Marres speaks of "material participation" to qualify her political theory, and this provides an inspiration for us to explore the potential democratic value of European objects. Her approach suggests that we connect the materiality of European objects with "matters of concern"[593] transcribed in regulatory languages. These matters of concerns regularly provide the impetus to turn technical entities into objects governed by European interventions, as shown by examples such as food products characterized by their geographic origins, chemicals suspected of adverse environmental effects, or energy originated from sources deemed greener than traditional ones. All of these European objects are directly linked to collective concerns that affect the lives of millions of Europeans. They are political in that they are connected to people's values. As such, they have no reasons to remain technocratic creatures, but can constitute the core of European policies that answer pressing public problems. They can be European objects that matter.

Rethinking the terms of harmonization then appears as a necessary condition to consider European objects as objects that matter. Throughout the previous chapters, we encountered many situations in which European interventions (often at the initiative of the European Commission) attempt to pursue a dream of harmonization based on science or the market, which fails to connect with the preoccupations of the actors involved. We saw that the replacement of national labels by the CE mark for construction products, or the introduction of market instruments meant to harmonize energy markets risk ignoring many national and local concerns. But the more sophisticated versions of harmonization are not ready-made solutions to the problem of defining European objects that matter. The example of

[591] Marres, 2012
[592] See for a discussion : Laurent, 2013
[593] Latour, 2004

chemicals regulated under the case-by-case approach shows that alternatives to the dreams of harmonization can result in bureaucratic systems that remain stubbornly opaque.

What these considerations show is that if there are avenues to rethink the dreams of harmonization in ways that build on European objects that matter, they require institutional works through which matters of concern can be identified and dealt with. This invites us to envision a European politics based on the ability to represent public issues through European objects, and which associates political subjectivity with object-mediated concerns. Thinking in those terms is at odds with the understanding of European citizenship in purely economic terms. Instead of turning workers into disentangled market objects, it would lead to characterize and protect local work environments, in terms that matter to those that occupy them. Instead of seeing the European citizen as a consumer defined by the range of the choices provided to her, it would ground European citizenship on the ability to voice concerns about objects that matter for Europeans.

What are the consequences of this approach for the dreams of harmonization based on science and the market? First, it suggests that we displace the dream of the view from nowhere to consider that European objectivity is inherently tied to regulatory objectives on the one hand, and to the concerns and needs of the actors involved in its production on the other hand. As such, it can be labelled an "interested objectivity", as I discussed in chapter 5. This original mode of producing objectivity can provide crucial resources to deal with scientific and political issues. It requires, to do so, careful institutional reflection about the asymmetry issues we discussed above. Second, a European politics based on objects that matter does not oppose national sovereign choices to a domain of European sovereignty based on the market, but sees the legitimate source of European action in an ability to articulate collective concerns with the organization of many markets. The examples we encountered about energy and the environment and the recent literature on "concerned markets"[594] show that this articulation is possible. This perspective consists in re-politicizing market objects. It can be extended, beyond the organization of the Single Market, to the European economic and monetary policies. Economists' propositions about "currency federalism" are particularly interesting at this point[595]. They envision the possible

[594] Geiger et al., 2014
[595] Théret and Kalinowski, 2012

coexistence between the euro and national currencies guaranteed by fiscal revenues, and tied to the common currency. These national currencies could be provide additional tools for monetary policies, and could be used to meet national priorities. This shows that even European currencies can be turned into European objects that matter, and that the dream of the market unified by the euro can be re-imagined.

What European crisis? Re-narrating failure

Considering European objects that matter as a basis for a renewed constitutional reflection about Europe is ambitious, but ultimately necessary at a time when the relevance of the European project is challenged. There is another international organisation in needs of public support, the International Panel on Climate Change (IPCC), which has lessons to offer to our reflections on Europe. The IPPC functions as an organisation mixing together international diplomacy and technical expertise, and re-drawing the boundary between science and politics in significant ways[596]. Yet the IPPC is also quick to adopt the discourse of "pure" science when publicly challenged, showing that it fails to defend its approach as an innovative way of producing both science and international diplomacy[597]. It did so when emails sent by some of its members were leaked. This episode became known as "climategate" and made the scientific ethos in policy circles a central concern[598], possibly impacting public trust in scientists[599]. When the answer to this episode described the IPCC in the terms of universal science, it contradicted the actual practices of the international organisation, and provided ammunition to climate sceptics all too prompt to claim that climate knowledge is not universally accepted science. Thus, the case of the IPCC is a forceful reminder of what the disconnection between the dream of purified science and the actual practice of expertise entails. But it has a deeper lesson to offer, which relates to how human beings are expected to relate to policy making, and possibly contribute to it. As Sheila Jasanoff puts it, climate science as mobilized by the IPCC tends to "detaches global fact from local value, projecting a new, totalizing image of the world as it is, without regard for the layered investments that societies have made in worlds as they wish them to be. It therefore

[596] Miller, 2001
[597] Beck, 2011
[598] Grundmann, 2011
[599] Leiserowitz et al., 2013

destabilizes knowledge at the same time as it seeks to stabilize it"[600]. What is then required for climate science and the international institutions in charge of producing it is "a new climate for society" able to re-imagine both the discourse and practice of international climate science so that it is articulated with local experience and normative issues about collective priorities and ways of dealing with them. Recent events such as the yellow vest movements in France show that concerns about social justice and economic inequalities are crucial components of climate policy, and that there is a risk divorcing them from the production of expert knowledge.

One can take inspiration from this example to reflect on Europe's constitutional challenges. As the IPCC, the European institutions struggle to articulate their roles and justify their interventions in explicit terms. And as the IPCC, it tends to revert back in time of crisis to familiar narratives based on universal references, namely that of science and the market. Brexit might be one of the most telling example of this dynamics, as the negotiations with the departing United Kingdom has led the European institutions to re-affirm the principles of the Single Market in an unanimous voice. In other cases, it is the dream of an objective expertise that is re-affirmed, whether when a new European agency is created in the wake of the BSE ("mad cow") crisis (see chapter 5), or when the European Central Bank (ECB) is granted new power to control national banks after the financial crisis (see chapter 8). Seeing crises as moments for deepening European integration has become a banal observation in European studies. Yet these examples show that this move is often conducted by re-affirming the dreams of science and the market, at the risk of contributing to what caused the crisis in the first place.

Crises are not always moments of integration though. The ongoing migrant crisis has seen the rejection of proposals from the European Commission consisting in allocating quotas of migrants across Member States[601]. Instead of a coordinated European answer stemming from a centralized expert vision of who should go where, Member States have chosen various answers, and national electoral politics have often resulted in migrants being targeted. Complex data infrastructures meant to make migrants visible through the eyes of the centralized apparatus of control mastered by a new dedicated European agency (called

[600] Jasanoff, 2010: 236

[601] See for a comparison between the financial and the migrant crises: Schimmerlfennig, 2018.

Frontex) can be seen as attempts at constructing an objective description of individual "others". Yet they remain criss-crossed by variations across Member States and pervasive technical uncertainties[602]. In chapter 8, I discussed the case of the European reactions to the Fukushima accident. The nuclear stress-tests resulted in the elaboration of European teams of experts in charge of assessing nuclear plants; they carefully side-lined issues such as terror attacks or ageing, and were criticized for the little room they left to civil society groups. But in these cases of (relatively) failed integration in time of crisis, questions are raised about the appropriate European modes of action. During the migrant crisis and after the European Commission failed to turn the migrant into a technical object in need of scientific assessment from the viewpoint of the centralized European expertise, these questions related to the border as a technical artefact in need of permanent maintenance and evaluation (again through stress-tests[603]). In the nuclear case as I discussed in chapter 8, they related to the nuclear plants and to the identity of those able to assess its safety. The European answers to the migrant crisis and to the Fukushima accident have been unable to reproduce the dreams of the disentangled market and objective science. It is precisely because of this shortcoming, and their associated uncertainties, that they challenge the dreams of science and the market. When understood in these terms, crisis can indeed be positive engines for the European project, but only if they leave room for re-thinking the existing dreams of harmonization – precisely what Brexit and the financial crisis have not led to, but the migrant crisis might still provide. One needs, in other words, to shift from solving failures of harmonization to recognizing the all too frequent failures of imagining harmonization in new ways.

Rethinking the democratic deficit

The discourse of crisis is of course shared by both the analysts and the European actors, including about the European construction as a whole. The "democratic deficit" is an expression that has become a common trope in academic and policy circles, including in those that are directly related to European institutions. It has led to a series of initiatives

[602] Pelizza, 2019

[603] "New EU border agency to stress test member states", EUObserver, 11 July 2016, https://euobserver.com/migration/134303, last accessed April 28, 2019.

meant to bring Europe "closer to citizens". A "Europe closer to citizens" has become one of the priorities of the European cohesion policy[604], and variations on this theme are regularly heard in European circles. One can connect it with participatory initiatives meant to include more people in European policy-making[605], punctual events explicitly targeting European citizens such as the "year of citizens" (in 2013), and public engagement initiatives about specific policy domains, such as those related to "responsible research and innovation".

There are contrasted evaluations of these programs. One can discuss how they shape particular publics and public concerns. My objective is not to diminish the value of these initiatives. But I want to point to the deeper constitutional work needed if one is to take the crucial role of European objects seriously. The initiatives that are meant to "democratize" the functioning of the Union risk forgetting what it means to democratize what is at the heart of European interventions, namely European objects. If Europe is indeed a "regulatory state", as Giandomenico Majone would have it[606], and is so by the democratic will of its member states, one should not consider that "regulation" is outside the realm of democratic politics. But doing so requires that one connects the making of objects with the concerns of human subjects, and reflect on the practical means whereby they have the possibility to voice these concerns. This also means that "regulation", less than a technical process entirely determined by the cold rationality of science and the market, becomes a terrain of explicit experimentations and contestations. If seen as explicit political entities, then European objects might provide the best practical path for re-envisioning regulation in those terms. At the time when numerous collective concerns, from energy systems to food products, and from artificial intelligence to chemicals, required interventions on technical objects, this perspective makes the European regulation a crucial resource for meeting contemporary challenges. The European Union might be the only political entity able to derive much of its power from objects. Whether or not it will be able to re-invent the terms of its legitimacy with objects that matter for the European publics is a pressing question for the future of the Union.

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604 "A Europe closer to citizens. The urban and territorial dimension of Cohesion Policy post-2020". Conference at the European Parliament, 4th September, 2018. http://www.eu-about.eu/index.php/en/events/220-a-europe-closer-to-citizens-the-urban-and-territorial-dimension-of-cohesion-policy-post-2020 last accessed 25 January 2019.

605 Badouard, 2013

606 Majone, 1994 ; 1996.

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