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Maintaining Legitimacy: Controversies, Orders of Worth, and Public Justifications

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ABSTRACT We build on Boltanski and Thévenot's theory of justification to account for the ways in which different stakeholder groups actively engage with discourses and objects to maintain the legitimacy of institutions that are relevant to their activity. We use this framework to analyse a controversy emerging from a nuclear accident which involved a large European energy company and sparked public debate on the legitimacy of nuclear power. Based on the findings, we elaborate a process model of institutional repair that explains the role of agents and the structural constraints they face in attempting to maintain legitimacy. The model enhances institutional understandings of legitimacy maintenance in three main respects: it proposes a view of legitimacy maintenance as a controversy-based process progressing through stakeholders' justifications vis-à-vis a public audience; it demonstrates the role of meta-level 'orders of worth' as multiple modalities for agreement which shape stakeholders' public justifications during controversies; and it highlights the capacities that stakeholders deploy in developing robust justifications out of a plurality of forms of agreement.

INTRODUCTION

How do organizations attempt to maintain the set of institutional arrangements within which they operate? How do they engage with relevant stakeholder groups when their legitimacy comes under threat? Theorizations of legitimacy have emphasized the relationship between organizations and the constituencies to which they relate (Ashforth and Gibbs, 1990). Such relationships are often portrayed in either strategic or institutional terms (Suchman, 1995). Strategic approaches have called attention to the role of managerial agency in addressing legitimacy threats and garnering societal support (Elsbach, 1994; Oliver, 1991; Pfeffer, 1981; Pfeffer and Salancik, 1978). From this perspective, legitimacy processes often involve conflict among social organizations, which is typically addressed through negotiation, decoupling, and impression management tactics (Elsbach and Sutton, 1992).

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Institutionalist approaches, on the other hand, have focused on how cultural environments and symbolic systems influence legitimacy processes (Friedland and Alford, 1991). Institutionalists downplay the role of managerial agency and consider the collective structuration of entire fields or sectors of organizational life (Suchman, 1995, p. 576). From this perspective, social organizations achieve legitimacy through convergence towards rationalized myths and dominant institutional logics (Lounsbury, 2001, 2007; Meyer and Rowan, 1977; Thornton and Ocasio, 1999, 2008).

Recent approaches within institutional theory have attempted to develop a more balanced view of legitimacy processes. A number of scholars have suggested that discourse and rhetoric play a key role in creating, maintaining, and repairing legitimacy (Elsbach, 1994; Phillips and Malhotra, 2008; Phillips et al., 2004, Suddaby and Greenwood, 2005). In particular, they have highlighted the symbolic work by which social actors construct legitimating accounts linking contentious issues to broader cultural views and competing logics (Zilber, 2002, 2006). However, little attention has been paid to the fact that disputes over legitimacy may require social actors to justify their positions vis-à-vis a public audience. This has three important interrelated aspects. The first is that, in developing their justifications within the public arena, actors have to provide rationales consistent with socially accepted definitions of the common good. Second, to do so, actors may have to actively engage with competing definitions of the common good held by different social groups. Third, the development of effective justifications in such contexts requires specific competencies with regard to the construction of convincing accounts and arguments.

In this paper we draw on Boltanski and Thévenot's (2006 [1991]) theory of justification to address these limitations and extend current conceptualizations of legitimacy maintenance. According to Boltanski and Thévenot, legitimacy rests on a number of higher order principles or 'orders of worth' that sustain the harmonious arrangement of things and persons in a state of general agreement and to which people most often resort when disputes arise regarding the coherence and justness of a social order. Challenges to the existing common order constitute 'legitimacy tests', i.e. moments of critical questioning in which the worth of particular arrangements needs to be justified. Legitimacy tests are performed through specific 'tests of worth'. These are argumentative moves, based on available orders of worth, that actors bring into play so as to evidence the 'state of worth' of things and persons under scrutiny. Tests of worth comprise both discursive and material moves and provide the basis for assessing the strength of public arguments according to a given order of worth. Boltanski and Thévenot's theory thus focuses on the role of competent actors in seeking compromise when institutional arrangements are disrupted. It is therefore particularly well suited to analysing how stakeholder groups engage in public debates so as to handle disagreement and maintain the legitimacy of institutions relevant to their activity.

To be sure, there are important similarities in how institutional and justification theories approach legitimacy processes. Of particular interest is the assessment of 'orders of worth' in relation to 'institutional logics', the latter featuring as a key construct within discursive approaches to legitimacy processes. Both orders of worth and institutional logics can be seen as higher common principles that reflect the degree of legitimacy of certain rules and values in society and define appropriate forms of conduct (Thornton

and Ocasio, 2008, pp. 102–3). On the other hand, discursive approaches to institutions and orders of worth are based on different assumptions with respect to representations of the social order, definitions of legitimacy, role of agency, and types of dynamics at play. Specifically, discursive approaches tend to consider the social order as segmented in stable institutional fields in which legitimacy is discursively maintained through stakeholders' compliance with a dominant logic (Friedland and Alford, 1991; Thornton, 2002). The evolution of a field may generate tensions in the existing order, which may prompt the emergence of alternative/competing logics and discourses (Suddaby and Greenwood, 2005). Shifts from one logic to another promote processes of institutional change (e.g. Townley, 2002). Agency emerges in times of transition between logics and it is mainly manifested in processes of conformity seeking and realignment with the new logic. Conversely, in Boltanski and Thévenot's framework, institutional environments are fragmented in a plurality of orders of worth, the social order is negotiated on an ongoing basis, and legitimacy is achieved through public debate among competent agents. In fragmented and contested institutional environments, the harmonious arrangement of things and persons is always 'up for grabs' and stability requires deliberate efforts aimed at resolving disputes and achieving compromise. This means that focal organizations and other stakeholders have to engage in continuous work of justification *across* available orders of worth, in order to maintain an acceptable level of legitimacy for their actions. The above differences substantiate the added value of Boltanski and Thévenot's framework vis-à-vis discursive approaches to institutional legitimacy.

We demonstrate the value of this conceptualization of legitimacy maintenance in the context of a controversy over safety provoked by a major nuclear accident involving Vattenfall Europe, a large European energy company based in Sweden. Controversies provide interesting settings for studying dynamics of institutional maintenance because they constitute legitimacy tests. Our findings highlight how stakeholders justified their positions by mobilizing in their discourse higher order principles that enabled them to settle the controversy and maintain the legitimacy of the institution at stake, namely nuclear power.

Our study contributes to the institutional understandings of legitimacy maintenance in three main respects: it proposes a view of legitimacy maintenance as a controversy-based process progressing through stakeholders' justifications vis-à-vis a public audience; it demonstrates the role of meta-level 'orders of worth' as multiple modalities for agreement shaping stakeholders' public justifications during controversies; and it highlights the capacities that stakeholders deploy in developing robust justifications out of a plurality of forms of agreement.

THEORIZING LEGITIMACY MAINTENANCE

Institutionalist Perspective on Legitimacy Maintenance

Institutional theories of organizations have traditionally focused on how cultural environments shape organizational ways of viewing and interpreting the world and consequently generate isomorphism within selected fields of organizational life

(DiMaggio and Powell, 1983; Suddaby and Greenwood, 2005). Such theories have emphasized how organizations gain, maintain, and repair legitimacy by adopting formal structures that conform to socially constructed systems of norms, symbols, and beliefs (Meyer and Rowan, 1977; Suchman, 1995). This perspective has added a great deal of theoretical value by drawing the boundaries of organizations' discretion and clarifying how environments influence organizations (Heugens and Landler, 2009).

More recent institutional studies rely on a less 'environment-driven' approach to organization behaviours and seek to reintroduce agency, interests, and power into the analysis (Young et al., 2000). Of particular relevance to the focus of this paper is the development of a discursive approach to institutions, which emphasizes the role of language, rhetoric, and analogical reasoning in shaping legitimacy processes (Alvesson, 1993; Cornelissen and Clarke, 2010; Douglas, 1986; Etzion and Ferraro, 2010; Green, 2004; Green et al., 2009; Phillips et al., 2004). We are particularly interested in the stream of studies, developed within the discursive tradition, that looks at how the interplay of institutional factors and actors' rhetorical strategies influence the construction of accounts and arguments during controversies, disputes, and organizational change processes (Elsbach, 1994; Maguire and Phillips, 2008; Suddaby and Greenwood, 2005).

Arguably, discursive perspectives on institutions have taken a middle course between strategic and institutional orientations, thereby offering a more balanced view of the classic structure–agency problem (Heugens and Landler, 2009). For example, Elsbach (1994) combined concepts from impression management and institutional theories to explore how spokespersons from the California cattle industry developed verbal accounts to maintain, repair, or manage organizational legitimacy after controversial events. Her findings suggested that effective accounts were constructed by combining rhetorical tactics (i.e. acknowledgements) with reference to widely institutionalized organizational characteristics (i.e. normative and socially endorsed organizational practices). More recently, Suddaby and Greenwood (2005) investigated the role of rhetoric in legitimating profound institutional change. In a study conducted in the context of large accountancy firms, they found that institutional change arises from discursive struggles between proponents and opponents of new institutional logics. Their findings highlight that the pursuit of legitimacy is primarily a rhetorical endeavour shaped by underlying institutional logics.

While the choice of a middle course between strategic and institutional orientations has substantially contributed to addressing the 'embedded agency' paradox (Battilana and D'Aunno, 2009; Garud et al., 2007), its contribution to the understanding of how individuals and organizations actively negotiate issues of legitimacy in changing, fragmented, and contested institutional environments remains limited. In particular, three aspects of legitimacy maintenance appear to be under-theorized within the existing literature.

First, institutional arrangements are periodically subject to legitimacy tests during which the status quo needs to be justified vis-à-vis social audiences. In normal circumstances, organizations use their legitimacy to conduct their business-as-usual according to criteria of technical efficiency. However, disruptive occurrences may

challenge this legitimacy and call into question the implicit social contract between an organization and the institutional context in which it operates. Legitimacy tests often take the form of public controversies in which multiple stakeholder groups scrutinize the focal organization (Ashforth and Gibbs, 1990), collectively make sense of controversies, and give sense to collective audiences and relevant constituencies. Moreover, this specific public and collective nature of legitimacy maintenance suggests a focus on the processes of consensus-building that take place when the social order is disrupted. Although previous studies have theorized conflicts and struggle between institutional logics (Thornton and Ocasio, 2008, pp. 117–19), the dynamics of agreement and disagreement surrounding legitimacy tests and leading to the institutional maintenance or disruption have received scant attention within the institutional perspective.

Second, the process of legitimacy maintenance in contexts characterized by multiple institutional logics is still under-theorized. Institutional logics as constructs have been typically deployed to explain dynamics of institutional change, which are often portrayed as a shift from one dominant logic to another (Dunn and Jones, 2010, pp. 114–15; Thornton and Ocasio, 2008, pp. 114–19; Townley, 2002). Although recent research suggests that institutional logics can be hybridized within organizations (Battilana and Dorado, in press; Pache and Santos, 2010; Spicer and Sewell, 2010) and that a plurality of institutional logics may co-exist over time within a professional field (Dunn and Jones, 2010; Trank and Washington, 2009), little attention has been paid to the interplay between logics and the active role of agents in processes of legitimacy maintenance in such contexts (Lawrence and Suddaby, 2006). Yet, studying this role is particularly important for understanding the kind of 'institutional work' required to maintain institutions (Lawrence et al., 2009).

Third, legitimacy maintenance from the institutional perspective is mainly conceptualized as a search for conformity with a dominant institutional logic at the field level (Suddaby and Greenwood, 2005; Thornton, 2002; Thornton and Ocasio, 2008; Townley, 2002). While decoupling and impression management tactics provide actors with some flexibility in constructing legitimate accounts (Elsbach, 1994; Elsbach and Sutton, 1992), actors are ultimately constrained either to conform with or to deviate from abstract institutional logics. These logics reflect macro-forces, and they are regarded as being beyond the reach of actors (Thornton and Ocasio, 1999, 2008). The institutional perspective thus downplays actors' deliberate engagement with institutional logics and it underestimates the competencies that actors deploy in their efforts to repair or maintain legitimacy.

The above review highlights that current institutional theories have not paid sufficient attention to how focal organizations and other stakeholders debate and discursively justify the legitimacy of an institution when controversies arise and several forms of legitimacy are brought into play. To address this concern, we build on insights from Boltanski and Thévenot's (2006 [1991]) theory of justification. This theory acknowledges the existence of a plurality of orders of worth that cut across organizational fields and social worlds; it recognizes the cognitive flexibility of actors, who are able to mobilize and combine orders of worth for the purpose of legitimacy repair; and it specifies the process whereby orders of worth are tested in the public arena.

Justification Perspective on Legitimacy Maintenance

Boltanski and Thévenot's framework is grounded on prior empirical work by themselves, as well as on a systematic analysis of seminal works in political philosophy (e.g. by Augustine, Smith, and Rousseau) that have sought to define the common good. For example, Boltanski (1990) conducted numerous empirical studies in the 1980s to illustrate how individuals mobilize various rationales to advocate their positions, build convincing arguments, or demonstrate that a situation is fair or unfair. In *On Justification*, Boltanski and Thévenot have built on these insights to explore the higher order principles on which individuals rely when making their case during disputes.

Boltanski and Thévenot's central thesis is that agreement and discord in societies rely on six 'orders of worth' or 'common worlds' – systematic and coherent principles of evaluation that can exist in the same social space. 'Orders of worth' can be regarded as higher order principles that structure social spheres and can be mobilized in the context of 'tests of worth' to resolve disputes between actors with differential degrees of legitimacy. If agents in a conflict invoke different orders of worth, however, then a 'test of worth' cannot be used, so that compromise may be necessary to resolve disputes. The six 'common worlds' are the *civic* world, the world of *fame*, the *market* world, the *industrial* world, the *domestic* world, and the *inspired* world. Later extensions of the original framework by Lafaye and Thévenot (1993) and Thévenot et al. (2000) have identified the *green* world as an additional 'common world'.[1] Table I presents a consolidated view of these seven worlds.

Each of the 'common worlds' can be characterized according to criteria that define the parameters for legitimacy tests. These include: the relevant mode of evaluation or worth, the kind of test and the relevant kind of proof that are needed to assess and to evaluate the worth, the types of objects and human beings involved in these worlds, as well as their approach to time and space. Boltanski and Thévenot devote particular attention to the material dimension of justification. Justifications involve more than just 'words' or 'accounts'. Agreement must be reached in practice through 'tests of worth' involving objects (e.g. machines and technologies for the industrial world; commerce, transactions, customers and suppliers for the market world). In fact, worlds and the objects belonging to them cannot be described without reference to the reports that people make about them (Boltanski and Thévenot, 2006, pp. 130–3).

Orders of worth are legitimate forms of common good, which provide universal principles of logical coherence as well as justice. Being universal, such orders of worth are symmetrical, i.e. they carry equal weight. The possibility that there may be several forms of agreement based on universal principles constitutes a major difficulty in the construction and maintenance of legitimacy. In fact, the conflicting requirements stemming from a plurality of forms of legitimacy may produce tensions that lead to more or less precarious compromises. Whenever controversies arise, actors engage in public debate and purposefully develop arguments out of available pieces of evidence in order to pragmatically determine the appropriateness of a given set of arrangements. Concepts of worth become particularly salient during controversies because these bring into focus how social actors handle disagreement and how higher order principles sustain or constrain their claims to justice. According to Boltanski and Thévenot, actors are

Table I. Overview of the seven orders of worth in the consolidated framework of Boltanski and Thévenot

'Common worlds'	Market	Industrial	Civic	Domestic	Inspired	Fame	Green
Mode of evaluation (worth)	Price, cost	Technical efficiency	Collective welfare	Esteem, reputation	Grace, singularity, creativeness	Renown, fame	Environmental friendliness
Test	Market competitiveness	Competence, reliability, planning	Equality and solidarity	Trustworthiness	Passion, enthusiasm	Popularity, audience, recognition	Sustainability, renewability
Form of relevant proof	Monetary	Measurable: criteria, statistics	Formal, official	Oral, exemplary, personally warranted	Emotional involvement and expression	Semiotic	Ecological ecosystem
Qualified objects	Freely circulating market good or service	Infrastructure, project, technical object, method, plan	Rules and regulations, fundamental rights, welfare policies	Patrimony, locale, heritage	Emotionally invested body or item, the sublime	Sign, media	Pristine wilderness, healthy environment, natural habitat
Qualified human beings	Customer, consumer, merchant, seller	Engineer, professional, expert	Equal citizens, solidarity unions	Authority	Creative beings, artists	Celebrity	Environmentalists, ecologists
Time formation	Short-term, flexibility	Long-term planned future	Perennial	Customary part	Eschatological, revolutionary, visionary moment	Vogue, trend	Future generations
Space formation	Globalization	Cartesian space	Detachment	Local, proximal anchoring	Presence	Communication network	Planet ecosystem

Source: Thévenot et al. (2000, p. 241).

'competent agents' in the sense that they are able to manipulate logics in support of their work of justification. This is apparent in several respects. First, social actors are endowed with the capacity to shift from one form of justification to another while being constrained by the imperative of remaining true to a consistent set of requirements. Second, they can discursively elaborate compromises by combining several forms of justification. Third, they can draw on their power positions within a field in order to build arguments based on compelling tests of worth and to promote particular configurations of the social order.

Under these circumstances, the theory of justification – as exemplified in the resolution of controversies over legitimacy – draws attention to the agency that actors bring into play when they 'criticize, challenge institutions, argue with one another, or converge toward agreement' (Boltanski and Thévenot, 2006, p. 15). According to Boltanski and Thévenot's framework, one can have a state of worthiness or unworthiness in each of the common worlds. That is, during a controversy different stakeholders can mobilize the same higher order principles to justify either one position or its opposite in specific cases. While orders of worth are universal categories providing a rationale for justification, their effectiveness depends on how justifications are constructed within them and publicly put forward. Effectiveness, however, does not simply result from rhetorically linking accounts to broader cultural views. The 'state of worthiness' of a particular order is linked to issues of legitimacy and power within a field. In certain fields, some actors are more powerful than others and thus will have voices that are 'louder' than others owing to their relative legitimacy. It follows that orders of worth constitute a 'political grammar' (Boltanski and Thévenot, 2006). They provide powerful institutional rules and discursive resources that actors can mobilize as ready-made categories in their work of justification (Selsky et al., 2003).

In the remainder of this paper we will draw on the above concepts to examine in detail the controversy-based dynamics involved in legitimacy maintenance. In particular, we are interested in further exploration of how stakeholder groups actively mobilize orders of worth to make sense of controversies, justify their positions in the public arena, and seek compromise among conflicting logics. In order to address these issues, we will examine the legitimacy maintenance process arising from a controversy over safety provoked by a nuclear accident.

METHODS AND DATA

Case Selection: Identifying a Controversy

Our study of justification focuses on a controversy that took place in Germany following a nuclear accident involving Vattenfall Europe. Vattenfall is a Swedish, state-owned energy provider operating in Denmark, Finland, Germany, Poland, Sweden, and Great Britain.[2] Several reasons have motivated the choice of studying a controversy in Germany involving a corporation based in Sweden. First, around 60 per cent of Vattenfall's core profit is earned in Germany, so that the German market is of crucial importance for this corporation. As an energy provider operating nuclear power plants in Germany, Vattenfall is dependent on compliance with German regulations and safety

standards in order to maintain its 'licence to operate'. Second, the German media have closely scrutinised Vattenfall, mainly in regard to the operations of its nuclear power plants abroad. The main disruptive event examined here – the 'Forsmark accident' – triggered national debate on the security of power plants in Germany. Third, Vattenfall's CEO, Lars Joseffson, played a leading role in the development of CO_2-emission trade and was enrolled as 'climate consultant' by the German chancellor Angela Merkel in December 2006. This fact highlights Vattenfall's political importance and high profile in Germany. Finally, one of the authors of this paper is German and was working at Vattenfall Europe at the time of the accident at Forsmark. This provided a unique opportunity to gain insights into Vattenfall's work of justification during the controversy.

Socio-Political Context

Central to the controversy dynamics is the historical role of the institution at stake – nuclear power – in the German socio-political context. Opposition to nuclear energy has a long and deep-rooted history in Germany. It dates back to the mid-1970s when the authorities planned to build an atomic reactor in a tiny village called Wyhl in South-Western Germany. This decision generated a vast protest movement involving large sections of German society and traversing the political gamut from right to left. The German anti-nuclear movement was further strengthened by the Harrisburg and Chernobyl accidents, which occurred, respectively, in 1979 and 1986. The latter triggered a lengthy debate on whether a definitive ban – the so-called 'nuclear energy phase-out' – should be imposed on nuclear energy in Germany. The Green Party was the prime beneficiary of this debate: in 1983 it won seats in the German Bundestag with the anti-atomic movement as a consolidated part of its founding myth.

In 2000 the 'Red–Green' (SPD and Green Party) coalition government announced its intention to gradually phase out nuclear power in Germany. Under the Nuclear Exit Law (2002), energy companies agreed on the gradual shutdown of all the country's atomic energy plants and cessation of the commercial use of nuclear power in Germany by 2020. The idea found support at a time when safety concerns about nuclear power reactors had been exacerbated by accidents like the one at Chernobyl in 1986. But that law came under pressure when a new government coalition comprising the conservatives and the Social Democrats came to power at the end of 2005. This political change revamped the debate on nuclear energy. In fact, many conservatives in the government (CDU) as well as liberals (FDP) were opposed to the phasing-out of nuclear power notwithstanding the grand coalition's pledge to honour the policies of the former administration. The advent of climate change as the dominant environmental issue in recent years has provided them with new arguments against the 'phase-out' strategy, with an ensuing debate on 'phasing-out from the phase-out'. The advocates of this position argue that nuclear energy should be kept because it is a clean source of energy which makes a major contribution to supplying Germany's power needs. Furthermore, rising energy prices have changed the German mood. The size of their power bills has induced many consumers to regard the deliberate phasing-out of nuclear power as illogical. Accordingly, the promise of the nuclear lobby – that nuclear plants produce clean, cheap energy – appears increasingly attractive. But despite widespread calls for the phasing-out

decision to be revised, the reasons for Germany's mistrust of nuclear energy have not changed. The shock provoked by the Chernobyl meltdown is still profound, and periodic nuclear mishaps in Europe regularly remind Germans of the dangers. Moreover, one of the enduring challenges of nuclear power is the disposal of the highly radioactive waste produced by atomic reactors.

At the end of July 2006, the grand coalition government reaffirmed that it was committed to the phasing-out of nuclear power. The main disruptive event examined here – the 'Forsmark accident' – occurred one year after an important change in the German government. Unsurprisingly, the accident reignited national debate on the security of power plants and reopened the controversy on whether nuclear energy should be abandoned.[3]

Research Design

To understand the role of justification in processes of legitimacy maintenance, we explored the interplay among 'common worlds' and relevant stakeholder groups during the controversy that followed the nuclear accident considered. We relied mainly on the press coverage of the controversy for two reasons. First, because the work of justification takes place in the public arena, we needed to focus on the public discourses produced by the stakeholders involved (Boltanski and Thévenot, 2006). Arguably, newspapers are forums in which stakeholders provide, directly or indirectly, accounts and rationales for their positions during controversies. Second, because today's society constitutes a 'media' or at least a highly 'mediated' reality (Luhmann, 2000), the written press offers appropriate source material with which to study the negotiation of social reality and the role of societal myths in this process (Zilber, 2006).

Although press articles provided a window on the controversy under investigation, they had important limitations as data sources because the information reported could have been strategically manipulated by the media themselves through processes such as framing or agenda-setting (Scheufele and Tewksbury, 2007). We adopted various measures in our analysis to account for media influence on the phenomenon under study. First, we selected a politically balanced range of media press journals to avoid any systematic political bias. Second, we included the Media as a stakeholder in its own right in our coding scheme and data analysis. Third, in our presentation below of the data, we mention the political orientation of the newspaper reporting the information when we think that it may have affected the nature of the reported information.

Data Collection

We isolated a key triggering event – the accident at the 'Forsmark' nuclear power plant – that had marked the beginning of a broader controversy. We then systematically collected all the newspaper reports mentioning 'Vattenfall' during the entire duration of the controversy in a set of German newspapers, as well as the official documents and communications produced by Vattenfall. We now describe these materials.

Vattenfall reports. We collected material from Vattenfall Europe with a clear focus on external organizational communication. However, when possible, we also collected

internal communication material in order to gain more insights into the work of justification undertaken by Vattenfall vis-à-vis its internal stakeholder groups. Altogether there were 90 documents from Vattenfall Europe, of which 11 were internal communications. We used these sources of information to triangulate the analysis of Vattenfall's work of justification.

Newspaper reports. Newspapers were sampled according to the following criteria: (1) availability of all the newspapers in an electronic format so that the analysis could be systematized through coding; (2) inclusion of Berlin (regional) and national newspapers; (3) balanced representation of German political orientations; and (4) focus on daily newspapers so that we could follow the controversy on a day-to-day basis. Use of these criteria led to the following list of six newspapers: *Berliner Zeitung* (BZ) – daily, regional, left-liberal: *Berliner Morgenpost* (BM) – daily, regional, conservative; *Tagesspiegel* (TS) – daily, regional, left-liberal; *Tageszeitung* (TAZ) – daily, regional, left; *Frankfurter Allgemeine Zeitung* (FAZ) – daily, national, conservative; and *Die Zeit* (DZ) – weekly, national, left-liberal/independent. From these newspapers we collected around 800 articles related to Vattenfall in general and 205 press articles directly related to the controversy, covering a time span of just over seven months (from 1 August 2006 to the end of February 2007). This set of articles constituted the main corpus that we analysed to evaluate the recurrence of the various orders of worth. Moreover, in our narrative presentation of the controversy we used some quotes from *Deutsche Welle* (DW), an international online broadcaster providing German news and information.

Data Analysis and Coding

Overall strategy. We used several techniques to make sense of the longitudinal process of justification that occurred during the controversy. First, we built a chronicle of the key events from the newspaper articles, which we used to identify the main turning points and to isolate the key episodes in the controversy ('sub-controversies'). Second, we plotted the 'media traffic' and quantified the press coverage in order to assess the intensity of the controversy and the distribution of orders of worth during the period considered. Third, we looked at how stakeholders justified their positions during the controversy by mobilizing orders of worth.

Content analysis. We conducted systematic coding of all the 205 press articles with the N-Vivo software. The coding system used to classify the newspaper reports was structured according to the 'common worlds' described by Boltanski and Thévenot (2006) as well as the relevant stakeholder groups. To code the 'common worlds', we initially developed a rudimentary list of semantic descriptors based on Boltanski and Thévenot's (2006) schematic account of common worlds (as reported in the margins of pp. 159–211). This allowed us to identify the presence of a given 'order of worth' in the text. We then expanded this original list through dictionary work and inductive reading of the sample texts (e.g. by adding synonyms as well as other terms that were systematically deployed in the text to refer to a particular 'order of worth'). Table II shows the complete list of

Table II. Semantic descriptors for the seven common worlds and their recurrence in the coded text

Common worlds	Semantic markers used for linking 'units of sense' to 'common worlds' during the coding process. Italicized terms reflect additions to the original list provided by Boltanski and Thévenot (2006)
Inspirational (1%)*	Anxiety of creation, passion, dream, fantasy, vision, idea, spirit, religion, unconscious, emotional, feeling, irrational, reflex, invisible, un-measurable, magic, myth, ghost, anthroposophy, super-human beings, affective relationships, warmth, creativity, escapism, intuition, fantastic, dreams, memories, *genius, fascination.*
Green (6%)	*Environment, influence or danger on environment and human beings, ecological, environmental protection, protection of the nature, plants, climate, environmental pollution, atomic waste, climate protection, climate change, radioactive pollution, rescue of the planet, reduction of CO_2-emissions, global warming, climate catastrophe, earth, renewable energies, sustainability, biomass, protection of the nature, fauna and health.*
Fame (8%)	Public opinion, public, audience, public attention, reputation, desire to be recognized, *public debate, boycott, public pressure, public legitimating,* opinion leader, journalist, PR-agent, sender, receiver, *media contact, communication strategy, banner headlines, reporting, personality, advertising,* brand, message, *campaign, recognition,* public image, persuasion, influence, propaganda, promotion, mobilization, down playing, misleading, *camouflage, fig leaf, red herring, lip service, pillory, populism, rumour, lye, breach of promise.*
Domestic (8%)	Engenderment, tradition, generation, hierarchy, leader, benevolent, trustworthy, honest, faithful, determination of a position in a hierarchy, inscription of signs of worth (titles, heraldry, clothing, marks), punctuality, loyalty, firmness, honest, trust, superior, informed, cordial behaviour, honest, trusting, good sense, leaders, family, rejection of selfishness, duties (even more than rights), loyal, harmonically, respect, responsibility, authority, subordination, honour, shame, hierarchy, cooperation, celebrations, family ceremonies, responsibility, transparency, duty, task, *dialogue, seriousness, information, German nation, transferability of international problems on German nuclear power plants, irresponsible, arrogant, euphemism, common identity, integration, common sense within organization.*
Civic (19%)	Collectives, collective will, legal, rule, governed, official, representative, common objectives, unitary concept, participation, rights and obligations, solidarity, moral beings, democratically, legislation, formality, code, statement, organizational goals, membership, mobilization, unification, freeing people form selfish interest, escape from chaos (division) and isolation, aspiration to civil rights, renunciation of the particular, transform interests of each into a collective interest, gathering for collective action, exclude, join, assemble, association, recruiting, extending, active mobilization, liaising, constant contact with organization, the legal text, republic, state, democracy, assembly, movement, election process, consultation, corporatism, rules, law, legal and formal steps, actions, processes, decisions and orders, *reaction of state institutions, orderliness, legal way, socialization, central state control, control, agreement, precept, political interests, approbation, political negotiation, legality, legal evaluation, legal precondition, right/false, political commission, political intervention, state regulation, political misuse, political report, anticompetitive, legal force, cartel, nuclear consensus, state observation, violation of law, resolution, proposal, democratic principle, public interest, corporate secrets, suing.*
Market (20%)	Competition, rivalry, value, saleable, interest, love, desire, selfishness, market, wealth, luxury; opportunism, liberty, opening, attention to others, sympathy, detachment, distance, possess, contract, deal, price, money, benefit, result, competition, management, conversion, *costs, calculation, liberalisation, profit, allowance, economy, profit maximization, success, compensation, services, business processes, forfeit, dividends, euro,* calculation, finance, payment, wages, oligopoly, monopoly, commerce, price, politics, saving, margin, asset, ownership, demand, supply, economy, production, millionaire, winner, competitors, client, buyer, salesman, independent worker, employee (worker), *investor, supplier,* buy, get, sell, economically, business, *cheap, expensive, economical efficiency.*

Table II. *Continued*

Common worlds	Semantic markers used for linking 'units of sense' to 'common worlds' during the coding process. Italicized terms reflect additions to the original list provided by Boltanski and Thévenot (2006)
Industrial (38%)	Efficiency, performance, future, functional, predictability, reliability, motivation, work energy, professionals, experts, specialists, operator, person in charge, means method, task, space, environment, axis, direction, definition, plan, goal, calendar, standard, cause, series, average, probability, variable, graph, time models, goals, calculation, hypothesis, solution, progress, dynamic control (security, opposite of risk), machinery, cogwheels, interact, need, condition, necessary, integrate, organize, stabilize, order, anticipate, implant, adapt, detect, analyse, determine, light, measure, formalize, standardize, optimize, solve, process, organize, system, trial, setting up, effectiveness, measure, instrumental action, operational, *measurement instruments, technique, technological, technological event, technological effects, nuclear power, degree of efficiency, coal, technological production process, faults, security, security management, security system, lack of danger, production, uncontrollability, consequences, analysis, report, information, causes, construction, knowledge, scale, security tests, time, emergency power supply system, aggregators, perturbation, supply system, components, construction, check, proof, solution, energy, technology, system, installation*

Note: *This common world has not been used in our counting and content analysis due to its very low recurrence in the data and its lack of importance in the unfolding of the controversy.

descriptors for the seven orders of worth as it has emerged from our analysis (additional descriptors have been italicized). It also reports percentages indicating the recurrence of each order of worth.

With the help of this list of descriptors, one of the authors coded systematically all the utterances in the transcribed texts according to the seven orders of worth. Each utterance was taken to be a 'unit of meaning' (Miles and Huberman, 1994, p. 56), that is, a phrase bound by a clear ending and that expressed at least one clear idea. When an utterance referred to multiple worlds, it was assigned to more than one code, as suggested by Boltanski and Thévenot (2006). This first coding of the 'order of worth' was then revised by the other co-authors to check the consistency of the coded text with Boltanski and Thévenot's (2006) original definition of each 'order of worth'. Once the interpretation was judged as robust and reliable, the coding was systematized.[4]

To code the stakeholders, we constructed a list of all stakeholders mentioned during the controversy and coded systematically when they were speaking or when their discourse was reported in the newspaper. We then grouped the stakeholders under convenient categories and focused our analysis on the voices of the most recurrent stakeholder groups.

Common worlds' quantification. We systematically counted the number of articles mentioning a given common world and used this data to quantify the intensity of common worlds' utilization across time. We found that the most popular forms of justification mobilized by the stakeholders were based on, respectively, the industrial world (cited in 77 per cent of the 205 articles), the market and civic worlds (40 and 39 per cent of the articles), and the domestic and fame worlds (17 and 16 per cent of the articles). The green

world was used to a lesser extent (11 per cent of the articles), while the inspired world was almost never mobilized (2 per cent of the total amount of press articles). We summed the total number of articles citing the common worlds selected (n = 413, because one article might refer to several common worlds) and calculated the relative weight of each common world within this total amount (see percentages reported in Table II). The logical unfolding of the controversy, as it emerged from the qualitative analysis of stakeholders' justifications, highlighted a more salient role of the domestic world (which was leveraged by most stakeholders involved in the controversy) with respect to the world of fame (which emerged mostly in the media arena), a difference that was overlooked in the quantification. Accordingly, our presentation of the findings is structured around four orders of worth, i.e. those from (respectively) the industrial, domestic, civic, and market worlds.

Stakeholders' mobilization of orders of worth. We then looked at the work of justification by the various stakeholder groups involved in the controversy. We counted the occurrences of each stakeholder's voice in the 205 articles in our dataset, identifying 636 passages corresponding to a stakeholder's expression of a justification based on a given order of worth. Our analysis suggested that political bodies, the press, and Vattenfall played a dominant role during the unfolding of the controversy. As shown in Table III, 75 per cent of the 636 passages in articles mentioning a justification refer to one of these three stakeholder groups: 250 (39.3 per cent) express the views of political organizations

Table III. Distribution of coded passages across stakeholder groups and time*

Stakeholder groups	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total rows	% rows
Media	61	20	2	9	9	11	12	124	19.50%
Vattenfall	35	20	5	9	1	4	37	111	17.45%
Envir. Min.	66	14	3	0	1	0	0	84	13.21%
Critics	39	20	7	8	2	0	4	80	12.58%
SKI	31	4	4	7	0	1	9	56	8.81%
Green NGOs	17	20	6	7	2	0	0	52	8.18%
CDU	13	8	3	0	7	0	5	36	5.66%
Green Party	18	6	3	2	2	0	0	31	4.87%
SPD	11	2	1	1	4	2	2	23	3.62%
Höglund	15	0	0	1	1	0	4	21	3.30%
FDP	8	2	0	0	0	0	0	10	1.57%
Left Party	3	2	0	0	0	0	0	5	0.79%
Experts	1	1	0	0	0	1	0	3	0.47%
Total columns	318	119	34	44	29	19	73	636	
% column	50.00%	18.71%	5.35%	6.92%	4.56%	2.99%	11.48%		

Note: *Cell colour legend.

20 ≤ X
10 ≤ X < 20
1 ≤ X < 10
X = 0

(including NGOs); 124 (19.5 per cent) correspond to the expression of media opinions on the controversy; and 111 (17.5 per cent) report Vattenfall's work of justification. We thus focused on these three crucial stakeholder groups in order to explore their work of justification at the micro-level of analysis.

HOW ORDERS OF WORTH SHAPED THE CONTROVERSY

A Legitimacy Test

At around 2 pm on Thursday, 25 July 2006, a major technical accident occurred at 'Forsmark', a Swedish Nuclear Power Plant (NPP) located around 130 kilometres north of Stockholm and managed by Vattenfall and other energy providers. During routine maintenance work, a short circuit disconnected a nuclear reactor from the power net. Shortly afterwards, the turbine and the generator of the NPP automatically shut down. Two of the four diesel generators that should have then kicked in to power safety systems failed to do so. Computers were affected as well, and the measurement instruments were temporarily out of order. Twenty-three minutes after the power cut the two generators were started manually and all the parts of the facilities were back in operation.

The accident was immediately reported to the Swedish Nuclear Power Inspectorate (SKI), which rated the incident as a level 2 event (i.e. a 'disturbance') on the International Nuclear Events Scale (INES) consisting of 7 degrees. The SKI decided to shut down the reactor as well as three further reactors because of similar construction flaws. Two days later the SKI report was dispatched to the International Nuclear Energy Organization (IAEA), which forwarded it to various countries. On 3 August, 'Forsmark' officially made its entry in German 'news' with a media report from the TAZ quoting the former construction manager at the Forsmark plant, Lars-Olov Höglund, who claimed that the event was a 'nearly nuclear meltdown':

> It was pure coincidence that no nuclear meltdown occurred. . . This was the most dangerous story since Harrisburg and Chernobyl. . . Seven minutes later and the destruction of the reactor could not have been halted. The consequence would have been a non-stoppable nuclear meltdown one and a half hours later. (03.08.2006, TAZ)

At this point the controversy about the accident, its causes and its likely impact, began. The content analysis of the documents collected revealed three intertwined and ongoing sub-controversies – 'Forsmark accident', 'Brunsbüttel debate', and 'Phase out' – which reflected the nature of the issues successively at stake. Figure 1 shows the intensity of these three sub-controversies over time. We use the three sub-controversies as a template for the presentation of stakeholders' arguments following the nuclear accident and the main orders of worth shaping the public debate on the maintenance of nuclear power in Germany.

Forsmark: An Industrial Sub-Controversy

The early debate focused on risk assessment and the technicalities of the accident. It was primarily framed within the industrial world. According to Boltanski and Thévenot
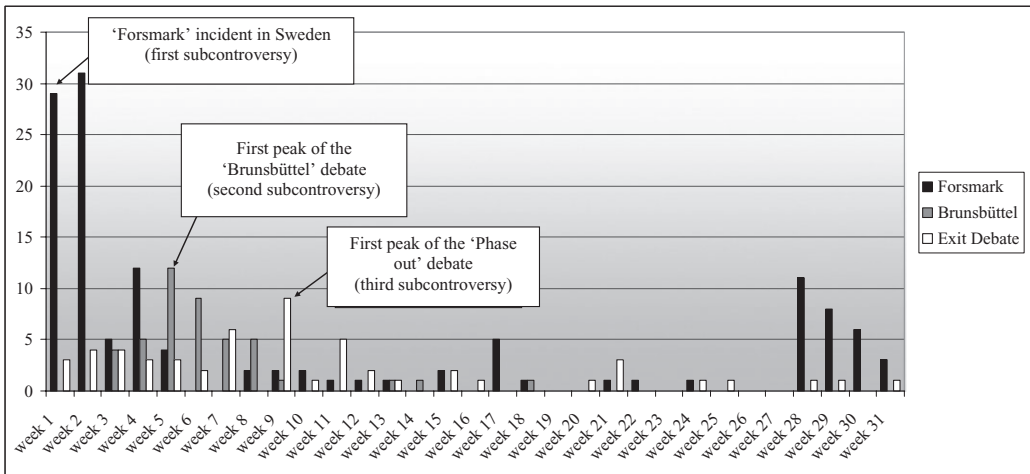
Figure 1. The temporal dynamics of the sub-controversies. Weekly count of the number of passages referring to the three sub-controversies in the press articles corpus

(2006), 'the ordering of the industrial world is based on the efficiency of beings, their performance, their productivity, and their capacity to ensure normal operations and to respond usefully to needs' (p. 204). The state of worthiness corresponds to a situation where beings (humans or organizations) are efficient, functional, reliable, controllable, and operational. By contrast, the state of unworthiness refers to situations where reliability is no longer ensured, creating potential incidents, risks, or random events that challenge the capacity to maintain control over organizations.

Given the nature of the event, it is unsurprising that the controversy was initially shaped within this higher order principle. The quantitative analysis demonstrates the dominance of this 'common world' during the entire controversy, as well as in each stage of the controversy's development (see Table II). This industrial controversy revolved around such questions as: What happened? How close was it to a nuclear meltdown? Is this a controllable technology? Different stakeholders mobilized the industrial world in order to convey their evaluations of the scope of the accident.

Vattenfall, the targeted organization, had to take a position in the public arena and it relied on an industrial 'test of worth' to define the problem, attribute causes, and defend itself. The company initially disputed the danger of a meltdown on technical grounds, affirming that the two diesel generators provided enough power to run the plant's cooling system. To support the company's 'industrial worth', Vattenfall's spokespersons furnished explanations based on technical reports, computer-aided tests, as well as simulations of the accident, including numbers and risk percentages. This led them to develop forms of account based on denials and to maintain that any assertions not based on analytical grounds lacked credibility:

'This is just not true. There was never such a danger. I don't understand where such claims come from', said the company's spokesperson Goeran Lundgren in Stockholm. (06.11.19, BM)

Definition of the nature of the accident also triggered a debate in the political arena. While the conservative parties claimed that the accident did not constitute a major security problem, the SPD and the Green Party saw the accident as a security risk because of the general inability to control the technology at Forsmark. The Environment Minister Sigmar Gabriel (SPD) took a more cautious position and claimed that investigations should be conducted before conclusions were drawn.

The media fuelled and amplified the political debate. In their editorials, left-wing newspapers tended to relate the accident to the uncontrollable situation at Chernobyl in 1986. They reported that the Forsmark NPP had been almost out of control and that the plant had many construction faults. More neutrally-oriented newspapers such as the TS described the event as a 'serious breakdown', but they avoided direct evaluation of the risk level and affirmed the need for further investigations (04.08.2006, TS). Likewise, conservative newspapers like the FAZ argued that policies on security could only be decided on the basis of non-biased analysis of the event:

> In addition to the reports about the glitch at the Forsmark Swedish nuclear power station, now once again evoked are more frightening scenarios *à la* Three Mile Island and Chernobyl. It therefore seems important to say where the essential differences lie among these three incidents. In short: the three incidents have nothing in common. (12.08.06, FAZ)

Brunsbüttel: Relocating the Debate in Germany

While the facts under discussion were still largely influenced by the industrial world, the political debate soon led to an argument on the accident's transferability to Germany which was mainly framed around the principles of the domestic world. This 'common world' refers to the fact of belonging to the same household conceived as a territory in which the relation of domestic dependence is inscribed (Boltanski and Thévenot, 2006, p. 90). The domestic world values the 'local' and the 'proximal', while it considers foreigners as figures of the 'unworthy' (Boltanski and Thévenot, 2006, pp. 165–7). The question being asked at this stage was: could an accident like Forsmark happen here, at home, in Germany? Addressing this question, and establishing whether the accident was idiosyncratic to the Swedish context, was essential for maintaining Germany's reputation as a 'trustworthy' nation. This discussion was reinterpreted in the tradition of industrial accidents related to nuclear energy in Germany. The 'Forsmark' controversy revived the older debates on Brunsbüttel, a plant involved in a major nuclear accident in 1978 and taken over by Vattenfall in the late 1990s. Was Brunsbüttel safe or not? Was Germany a secure place from a nuclear safety point of view?

While parties within the government coalition generally argued that an accident of this kind could never happen in Germany, other parties took a more critical view. Henrik Paulitz, speaking on behalf of the International Practitioners against the Nuclear War (IPPNW), demanded an immediate audit of all power stations in Germany, claiming that 'Something similar could happen anytime in Germany as well' (04.08.06, BZ). According to the environmental organization Greenpeace, some of Germany's 17 nuclear

power plants used a cooling system similar to that of Forsmark, and their safety should be checked.

Part of the domestic controversy involved issues regarding the reputation and trustworthiness of Vattenfall. During the annual shareholders meeting of 11 August 2006, Vattenfall's CEO, Rauscher, claimed that an accident such as Forsmark could not happen in Germany owing to differences in the technologies used in each country (VE, 2006). Vattenfall also reported that their reactors were running normally and that there were no plans to shut them down. In fact, the main issue for Vattenfall was maintenance of its licence to operate its Brunsbüttel nuclear power plant as well as others in Germany.

However, the media harshly criticized Vattenfall's defensive attitude. The left-wing and anti-nuclear power TAZ accused Vattenfall of diminishing the importance and impact of the accident, instead of analysing the problems and recognizing its responsibilities. The newspaper argued that Vattenfall 'had a nerve' to claim that German NPPs were secure. *Die Zeit* described Vattenfall's advertising on NPPs as 'naïve':

> As a special attraction, Vattenfall offers a simulated tour of the power station: 'Come and experience how to manage a power station and see how the employees handle different kinds of incidents.' Such advertising, which is still displayed on the information box, looks very naïve today. The incident at Forsmark has shown that the simulations are going beyond reality. (10.08.06, DZ)

Vattenfall's image was further damaged when an internal report on a lack of safety culture was leaked to the media in late January 2007. Following this event, Vattenfall was accused of non-compliance with safety regulations. In the second press release issued since the beginning of the controversy, the company admitted that there had indeed been security problems at Forsmark in July 2006, and that these problems had been caused by enormous strains due to high output and work to modernize the system. Although Vattenfall recognized that the deterioration in its safety culture was due to alcohol and drug consumption by employees, it insisted that the issue only concerned a fraction of its subcontracted workers. Nevertheless, left-wing media treated this statement as evidence that numerous employees were consuming alcohol and drugs. In response to the political and media criticism, Vattenfall dismissed the Forsmark chief manager for breach of safety standards and replaced him with a member of the Vattenfall Corporation in order to enhance development of a safety culture (VE, 2007). Overall, Vattenfall's communication shifted from rejection to accommodation.

The 'Phase-Out' Debate: A Civic vs. Market Sub-Controversy

The industrial and domestic controversies generated a broader national debate on the usefulness, safety, and legitimacy of NPP which was reframed according to the principles of the 'civic world'. The civic world can be roughly defined as the political environment of a given community (Boltanski and Thévenot, 2006, pp. 185–93). It is distinguished by the pre-eminence of the collective over individuals and the search for a higher common good. It points to notions such as civil rights, and it encompasses political aspirations. The state of worthiness in this world corresponds, for a collective social entity, with being

legal, governed, official, or authorized. By contrast, division and a lack of consensus would lead a country or a human group to unworthiness.

The Forsmark accident triggered a row on Germany's plans to phase out nuclear power. Should NPPs be shut down? Would it be legal to shut them down? Taking advantage of the new political situation after 2005, nuclear power operators in Germany attempted to evade their commitments to wind down their reactors, and they applied to extend their licences to operate NPPs (including Vattenfall's Brunsbüttel). This generated further tensions within the government coalition. In an interview with German public broadcaster ZDF, Environment Minister Sigmar Gabriel (SPD) suggested that the move was a political stunt:

> It would be more logical to say we'll phase out the older power stations and let the new ones run longer because they're safer. . . That energy firms are requesting the opposite leads one to suspect that this is not a sincere measure, but instead a means to buy time until the next election in the hope of a more favourable government being elected. (28.09.06, DW)

Marco Bülow, Germany's SDP environmental issues spokesperson, told the press that the Forsmark accident had made it clear that nuclear power technology was not in fact controllable, therefore:

> We cannot discuss extending the operating times for atomic power plants. (05.08.2006, BM)

The deputy head of the Green Party, Baerbel Hoehn, put forward a similar view:

> The grand coalition needs to make it finally clear that there will be no extension on operation end dates. (05.08.2006, BM)

On the other side, the FDP did not see these risks, nor any reason to stop the NPP technology (05.08.06, BM). Likewise, the CDU disagreed with the Green Party and the SPD on their contention that the technology in general was not controllable. However, other conservative politicians maintained that they would not let the already fragile coalition with the Social Democrats fail because of a dispute on this issue (28.09.06, DW).

The debate on the phase-out strategy was fed by further tests of worth based on cost/benefits analyses of NPPs, which highlighted an interconnection between the civic and market worlds. The market world values objects (goods and services) and regards 'competition' as its higher order principle (Boltanski and Thévenot, 2006, pp. 193–203). In this world, a state of worthiness for a good means that it can be sold easily, for an actor it means being materially successful (e.g. rich, profitable). In contrast, unworthiness refers to stagnating, failing, or losing for individuals and to being unwanted for goods.

Conservative parties put forward economic arguments focused on the profitability of nuclear energy (e.g. cutting prices, stimulating the economy), thus implicitly backing the

requests of energy operators. Others, like Höglund, had maintained from the very beginning that profit-driven policies and bad management were the main causes of the accident and the decline in safety culture. He claimed that investments in security had been reduced and security departments thinned out since liberalisation of the market. Accordingly, he argued for the nationalization of the NPPs so as to ensure better safety and phase-out through society and state. Left-oriented newspapers like the TAZ backed Höglund, while the more conservative FAZ questioned the uncritical reporting of Höglund's position in the media.[5]

This preliminary analysis of the case has highlighted that stakeholders' justifications were constrained by their legitimacy positions within the controversy, which generated power positions and the emergence of opposite camps. In the second part of the case analysis we therefore address this important agency-related issue by looking at how stakeholders selected and strategically mobilized relevant orders of worth.

HOW STAKEHOLDERS MOBILIZED ORDERS OF WORTH IN THEIR JUSTIFICATIONS

Building on our previous findings, we analyse the justification provided by political parties, the press, and Vattenfall during the controversy. We first focus on 'who said what' during the controversy. We then move to an aggregated level of analysis and consider patterns in the justifications put forward by actors either supporting or challenging nuclear energy as an institution. This analysis illustrates the interplay of stakeholders' work of justification as well as its aggregated impact over time.

Justification in the Political Arena

Figure 2 presents the orders of worth leveraged by the various political parties (including the environment minister Sigmar Gabriel from the SPD) and Green NGOs during the controversy. The common worlds used by these stakeholders are summarized in the columns, and they are positioned according to their political orientation, from left (socialist left party) to right (conservative FDP).[6]

These data show that political parties as a stakeholder group departed from the overall tendency of stakeholders to base their justifications on arguments from the industrial world. Rather, they tended to use a balanced mix of common worlds throughout the controversy, and they relied mainly on the civic and domestic orders of worth. This suggests that political parties were instrumental in pushing the controversy towards these worlds.

Although Figure 2 exhibits important variations in the reference to orders of worth across political parties, these variations did not always reflect an obvious anchoring of these stakeholders' discourses within their respective worlds. For instance, Green NGOs and the Green Party did not mobilize green rationales more frequently than most of their political counterparts. Indeed, conservative parties (CDU and FDP) also relied on this order of worth in their work of justification when they argued that nuclear energy contributed to reducing CO_2-emissions.
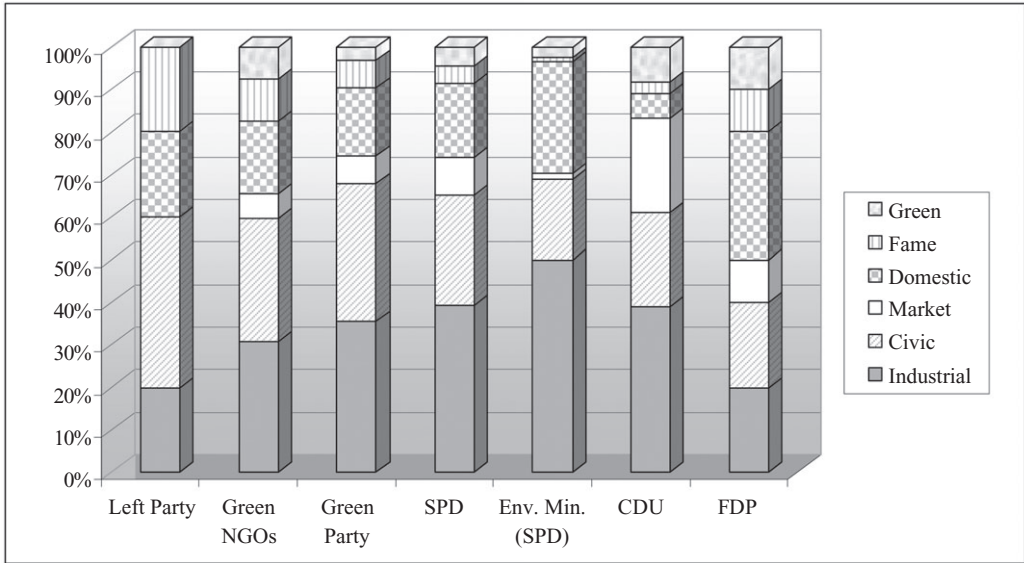
Figure 2. Work of justification in the political arena

Less counter-intuitively, these data show that the Green and the Left parties tended to mobilize the civic world more intensively in their justifications, whereas the conservative FDP relied more on the domestic rationale. Government parties (the CDU and the SPD) privileged the industrial rationale to justify their positions. However, whilst the SPD combined industrial explanations with arguments from the domestic world (thus focusing on safety issues concerning German territory), the CDU centred its discourse more narrowly around the market world than did any other political party. The purpose of this use of the market rationale was to demonstrate that reliance on nuclear energy was necessary to satisfy market demands.

Overall, government parties tended to take a defensive stance by mobilizing the world from which the controversy originated. Conversely, opposition parties tended to leverage alternative rationales, thus expressing disagreement and pushing the controversy towards different common worlds. These findings highlight the agency of stakeholders in the process of justification and their capacity to strategically mobilize orders of worth beyond their immediate political positionings in order to strengthen their discourse. This mobilization of different common worlds occurs either through the strategic appropriation of rationales from opposite camps (e.g. use of the green world to justify reliance on nuclear power by conservative parties) or through a 'reverse' use of the same order of worth. For instance, the market rationale was used across political-party discourses either to oppose (market as a threat to safety) or to support (market as a demand to be satisfied) the maintenance of nuclear energy.

Justification in the Media Arena

Because we coded the media press as a stakeholder its own right, we recorded how the newspapers in the sample supported or criticized the various arguments propounded
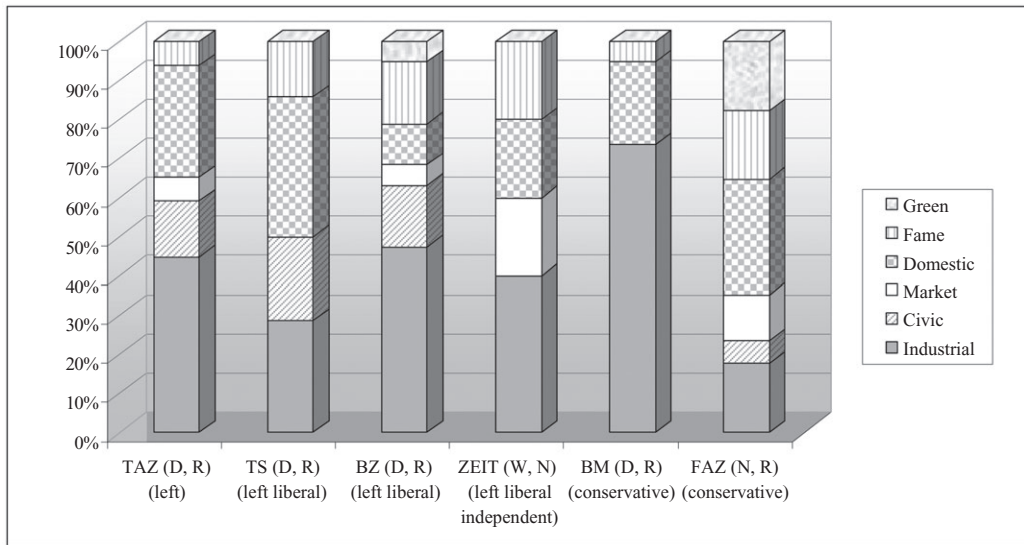
Figure 3. Work of justification by six newspapers

by the stakeholders involved in the controversy. Figure 3 presents the reference to orders of worth by the six newspapers most vocal during the controversy, including five daily regional newspapers and one weekly national newspaper (denoted, respectively, as D, R and W, N in Figure 3). The order of the columns reflects the political positionings of the newspapers (from left to right: left, left-liberal, independent, conservative).

The chart shows that newspapers mobilized the world of fame in their discourse more frequently than did other stakeholders. It also confirms that, as political parties, newspapers tended to draw less frequently on the industrial world, and that they put forward a diversified mix of rationales, except for the conservative *Berliner Morgenpost*, which based its discourse mainly on the industrial and domestic worlds. The left and left-liberal newspapers *Tageszeitung*, *Tages Spiegel*, and *Berliner Zeitung*, relied more on the civic world to build their justifications. They did so to signal that the government had the ultimate option of removing Vattenfall's licence to operate if the company did not comply with safety standards. As in the case of political parties, the green rationale was mobilized across the political spectrum, and the use of the domestic rationale could not be attributed to the more conservative newspapers because it was deployed in almost the same proportion by the two extreme newspapers in our sample.

Although our sample does not represent an exhaustive list of German newspapers, these data tend to confirm that actors' discourses do not necessarily rely on a unique order of worth corresponding to either their institutional domain (fame in the case of newspapers) or their political positioning. More generally, this analysis confirms the role of the press in moving the controversy beyond the industrial world, as highlighted in the narrative.
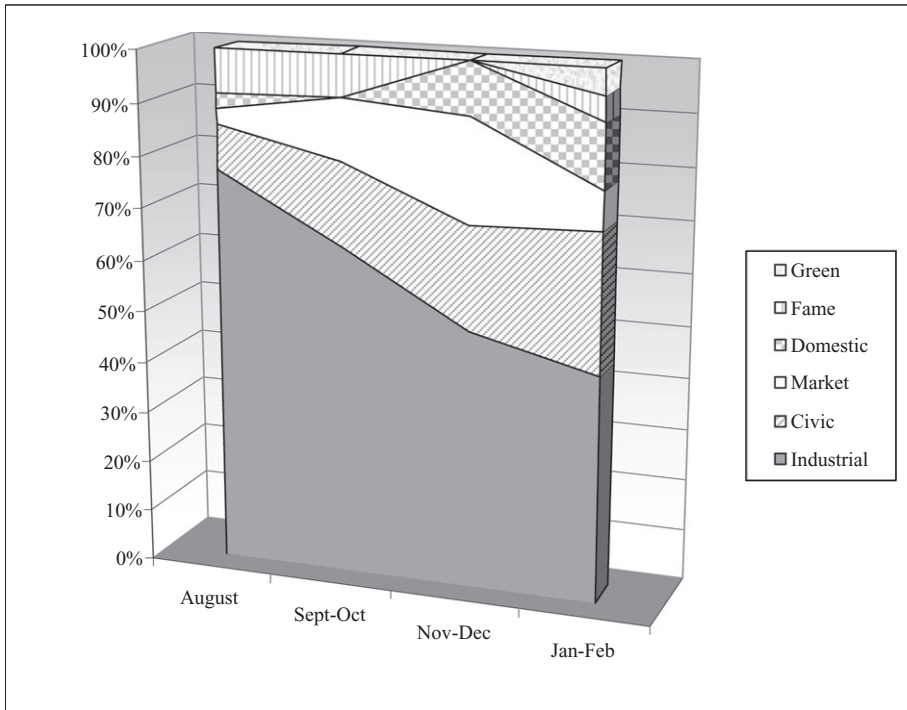
Figure 4. Dynamics of Vattenfall's work of justification

Vattenfall's Work of Justification

Figure 4 graphically represents the proportions of orders of worth mobilized by Vatten-fall, and it illustrates the key changes in the corporate argumentation over time.

These data show a shift in Vattenfall's work of justification from the industrial world (more than 70 per cent of the discourse during the first month) to a more balanced mix of rationales (the industrial order represents only 40 per cent of the justifications used during the last period, Jan–Feb). Vattenfall initially raised a technocratic defence based on arguments borrowed from the industrial world, thus neglecting the social and political aspects of the controversy; subsequently, the corporation shifted its discourse to accommodate criticisms, and it relied on alternative rationales.

The findings presented in Figure 4 illustrate how this change came about. First, there was a marked increase in the use of the market rationale – nuclear energy being presented as a less costly source of energy – from September to December (first three periods). Second, there was a constant increase over the four periods in the use of the civic rationale. This corresponded to the politicization of the controversy and revealed Vattenfall's repositioning of itself as a political actor able to contribute to solving the problem of energy in Germany. Third, there was a progressive adoption of domestic arguments to support maintenance of Vattenfall's nuclear power plant during the last period of the controversy. Fourth and finally, Vattenfall relied sporadically on the green rationale in the last stage of the controversy, when it argued that nuclear power was a greener source of energy. By and large, this trend confirms our previous findings. Caught

in the turmoil of controversy, Vattenfall did not rely solely on arguments from its own world; rather, it progressively diversified and refined its justifications by recognizing and embracing aspects of the problem linked to other worlds.

We now assess the dynamics of the impact exerted by justifications on the institution at stake at the aggregate level of analysis. We do so by simultaneously considering the work of justification deployed by the above categories of actors over time.

Aggregating Stakeholders' Work of Justification

The socio-political context in which the controversy developed suggests that the relevant stakeholders had pre-established political agendas on the issue under debate: historically, they were either for or against the development of nuclear energy. In order to assess how nuclear energy as an institution was affected by the various worlds of justification, we thus classified the main stakeholders into two camps according to their positive or negative overall attitudes to nuclear energy. We excluded stakeholders with unclear positioning and focused on the extreme groups (that is, either clear opponents or supporters).[7] Although this dichotomy oversimplifies the description of the controversy, it enables appreciation of how the stakeholders' vested interests affected justification dynamics at an aggregate level. Figure 5 presents these results, showing for each period of time the proportion of orders of worth referred to by the anti- versus pro-nuclear energy stakeholders.

Justifications by pro- versus anti-nuclear stakeholders. The opponents and defenders of the institution at stake adopted different combinations of justifications over time. Although a similar trend in the decreasing use of the industrial world's arguments can be observed on both sides, the stakeholders supporting nuclear energy continued to rely much more
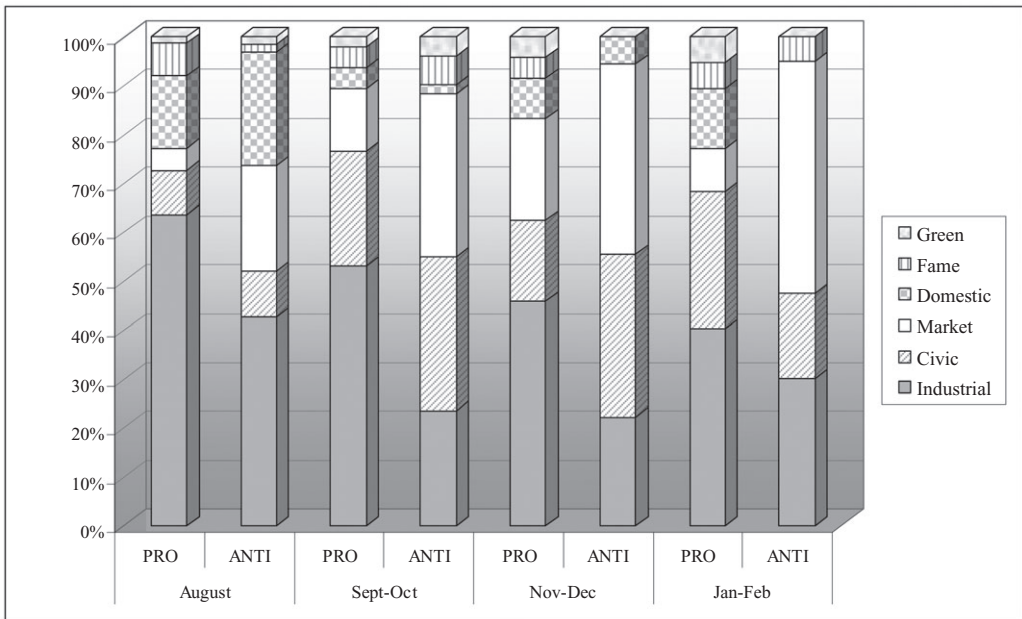

Figure 5. Dynamics of justifications by nuclear energy defenders and opponents

frequently on this order of worth than did the 'anti-nuclear' stakeholders throughout the controversy (the industrial world always accounted for at least 50 per cent of their justification discourse). Stakeholders opposed to nuclear energy brought arguments from other worlds early into the controversy: they relied substantially on the domestic and market worlds (from August to October), and then on the civic world (especially from November to February). By and large, their criticisms referred, respectively, to the risk of nuclear incidents in Germany (domestic), the negative influence of market pressure on nuclear safety (market), and the willingness to respect civil society's lack of support for this energy source (civic).

Interestingly, over time the pro-nuclear stakeholders exhibited a trend similar to the one highlighted in the case of Vattenfall. They progressively diversified their arguments and justified the use of nuclear energy by combining rationales from different worlds. For instance, they explained that nuclear energy had to be maintained to meet overall energy demands (market), that nuclear energy was crucial for enhancing Germany's energy autonomy (domestic), and that the government should extend the licence to operate NPPs (civic).

Aggregate impact of justifications. At an aggregate level of analysis, the sum of these successive changes in stakeholder groups' justifications contributed to shaping and reshaping the controversy around a dominant order of worth. Our analysis suggests that the justification work by stakeholder groups reflected the domain of the controversy – as demonstrated by the importance of the industrial world across all stakeholder discourses – as well as the stakeholders' own institutional domains and political orientations. At the same time, our findings point up the plasticity and flexibility of stakeholders' justifications during the controversy. Stakeholders were not prisoners of their own institutional worlds; rather, they were able strategically to combine justifications from various worlds in order to strengthen their support for (or criticism of) the institution at stake. Indeed the rationales used by various stakeholder groups did not obviously replicate their home domains because stakeholders could appropriate orders of worth mobilized by their opponents to build new justifications over time.

This analysis highlights the interdependency of stakeholders' justifications and the 'dialectical' nature of legitimacy maintenance (Hargrave and Van de Ven, 2009). At the individual agency level, the primary stakeholder groups attempted to steer the controversy according to their vested interests and underlying agendas. For example, Vattenfall presumably wanted to protect its current and potential commercial interests; parties supporting the coalition government were interested in maintaining political stability; while opposition parties arguably saw the incident as ammunition with which to attack the government. However, at the systemic level, the interplay between stakeholders' deliberate justifications and higher level orders of worth did not produce a debate polarized around a dominant logic potentially challenged by a competing one (e.g. market vs. civic). Rather, the debate was plural and multi-polarized, with logics shifting rapidly and being combined in new ways as a result of stakeholders' accommodation of emergent and socially relevant dimensions of the controversy. This finding indicates that legitimacy is maintained to the extent that actors are able to balance orders of worth in their discourse so as to develop justifications robust enough to withstand public scrutiny.

DISCUSSION AND IMPLICATIONS

Our study contributes to a richer understanding of the role of agents and the nature of the structural constraints that they face when attempting to enact institutional repair. In particular, the notion of justification enhances institutional explanations of legitimacy processes by acknowledging the public nature of legitimacy maintenance, specifying how actors engage with a plurality of orders of worth to maintain legitimacy, and highlighting the competencies that agents bring into play in this process.

Public Justifications and the Dynamic of Institutional Repair

Figure 6 depicts legitimacy maintenance as a controversy-based process progressing through stakeholders' justifications vis-à-vis a public audience and leading to institutional repair. Unsettling events, such as the Forsmark accident, constitute legitimacy tests in the sense that they pose a challenge to the legitimacy of nuclear power as a source of energy. The established social order, conceived as the harmonious arrangement of things and persons oriented towards the achievement of the common good, is disrupted and calls for repair (Lanzara and Patriotta, 2007; Patriotta, 2003; Weick, 1988, 1995). From an economy of worth perspective, a plant that functions normally enjoys a higher legitimacy status (i.e. it fits a common higher order principle) than that of a malfunctioning plant. Accordingly, a nuclear accident exposes the potential unworthiness of a technological object, which generates tensions among the plurality of common worlds sustaining the institution of nuclear power. Tensions take the form of public controversies concerning the nature of the event (what happened?), the cause of the problem (why did this happen?), and sometimes also its potential consequences and solutions (what should we do?). Stakeholders linked to the controversy may provide similar or competing answers to these three questions, thus settling or sustaining the controversy.
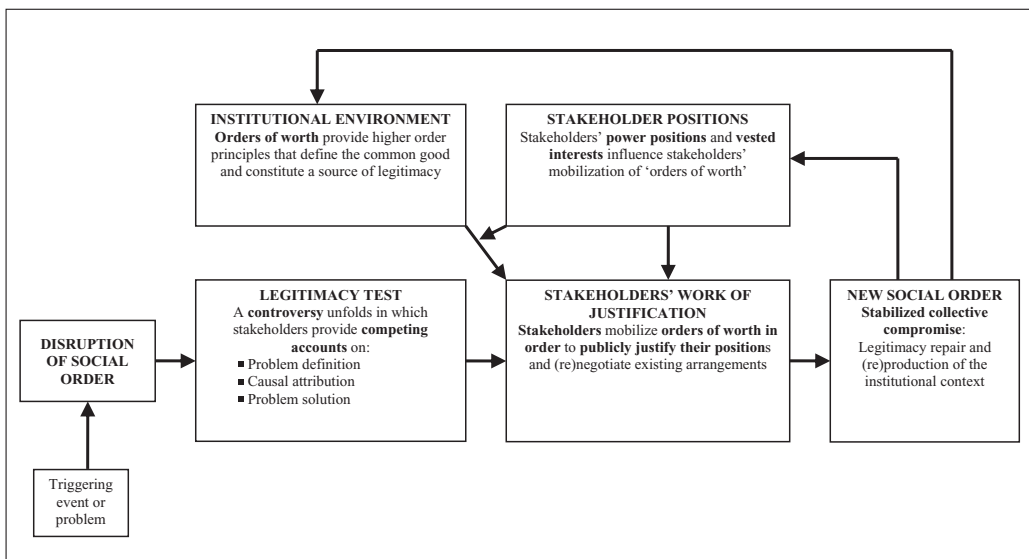

Figure 6. The dynamic of institutional repair

As stakeholders deal with controversies, they not only have to develop plausible accounts of specific happenings but they are also expected to offer rationales for those accounts, i.e. they need to justify their views according to legitimized principles (Weber and Glynn, 2006; Weick et al., 2005). The effectiveness of justifications in the public arena relies on the stakeholders' ability to make their positions socially relevant through 'tests of worth', that is, to generalize about pieces of evidence according to their congruence with common higher order principles. A nuclear accident, in fact, not only reveals the malfunctioning of a technological object; it also carries potentially catastrophic consequences for a community and therefore raises issues of social justice. Stakeholder groups therefore represent the general nature of the injustice suffered by linking their justifications to universal orders of worth. Interestingly, the dynamics of institutional repair emerging from the Vattenfall case resemble those of negotiation. Each of the major stakeholders in this controversy began with arguments primarily rooted in the dominant discourses of its home domain. These can be seen as natural and initial negotiating positions. What ensued was a process of negotiation in which the different stakeholder groups deliberately mobilized available orders of worth and put them to test in order to increase the legitimacy of their arguments. Vattenfall for example, as the focal agent and the one with the greatest material stake in this particular issue, made multiple attempts to use different orders of worth to build a final compromise – some found resonance among crucial stakeholder groups while others did not. The end result seems to be a 'good enough' compromise containing elements from different orders of worth that enabled a 'buy in' from enough crucial stakeholder groups (or at least defused their active resistance) so as to enable institutional repair by deflecting imminent threats (e.g. government legislation that might hinder Vattenfall's ability to continue its current strategy).

Our process analysis suggests that the work of legitimacy repair through the mobilization of orders of worth is path-dependent, a phenomenon that may bind actors' flexibility when relying on orders of worth. At each period of time, Vattenfall's justifications had to be consistent with prior justifications, and they had to reflect the outcomes of prior 'tests of worth'. Although the corporation could progressively integrate into its rhetoric differentiated orders of worth to defend nuclear energy as an institution, it was either enabled or constrained by its prior communications in the public arena (e.g. anchoring in the industrial order), by outcomes of prior tests of worth (e.g. supportive evaluation of nuclear risk by a third-party organization), and by uncontrollable factors (e.g. leaked report) that affected its capacity to rely on one order of worth or another.

Finally, the model suggests that legitimacy tests may lead to new configurations of the social order while preserving the legitimacy of existing institutions. This resonates with Lawrence and Suddaby's (2006) claim that the maintenance of institutions must be distinguished from simple stability or the absence of change: rather, institutional work that maintains institutions involves considerable effort, and often occurs as a consequence of change in the organization or its environment. Understanding how institutions maintain themselves must therefore focus on understanding how actors are able to effect processes of persistence and stability in a context of upheaval and change.

Legitimacy Maintenance as the Creative Embrace of a Plurality of Logics

Legitimacy maintenance as justification can be regarded as a form of institutional work in the sense that it refers to the 'creative embrace of contradiction' (Hargrave and Van de Ven, 2009, pp. 131–3). The work of justification developed by Vattenfall is particularly significant in this regard. One could assume that the mission and main basis of legitimacy for a company such as Vattenfall are linked to its ability to meet the energy needs of society. In this respect, nuclear energy is an efficient source of power at a time in which alternative sources are scarce and costly. Under such conditions, the industrial and market worlds provide powerful rationales that support the institution of nuclear energy and justify the existence of companies such as Vattenfall. In normal times, conformity with established orders of worth guarantees legitimacy and resources which allow the management of Vattenfall to take for granted large portions of the external environment and work towards the common goal of operational efficiency. However, critical events such as a nuclear accident may bring external stakeholders into the picture, resulting in a collision of multiple orders of worth and a lack of systematic tests for determining relative legitimacy across various institutional arenas (e.g. media and political arena). The Forsmark accident raised issues of safety and collective interest which were linked to the domestic and civic worlds and generated a heated controversy. The conflict between categorical rules and technical efficiency forced the managers of Vattenfall to actively engage in public work of justification. As shown by our findings, Vattenfall went on to make a series of compromises – ranging from symbolic statements of corporate contriteness to concrete changes in management – in order to settle the dispute. Its approach to justification became increasingly inclusive in order to accommodate the plurality of orders of worth raised by various stakeholders.

Boltanski and Thévenot's characterization of orders of worth sheds some light on how different logics can be combined, bridged, or blended (Glynn and Lounsbury, 2005; Goodrick and Reay, 2010). First, orders of worth constitute a 'political grammar', that is a repertoire of ordering principles that are available to individuals for the purpose of assessing themselves and one another. Hence several forms of legitimacy may coexist within the same social space. Second, orders of worth provide discursive resources and as such they are subject to interpretive flexibility. From this perspective, words and objects acquire different meanings depending on the context in which they are deployed. Because of interpretive flexibility, agents can mobilize the same order of worth in support of alternative justifications (e.g. green logic as argument pro/against nuclear power). Third, agents can move from the logic of testing to the logic of compromising. In other words, they can rely on figures of compromise that transcend two or more forms of worth (e.g. nuclear energy as cleaner and more efficient than other sources of energy).

Agency in Legitimacy Maintenance

Our case demonstrates the crucial role of stakeholders as competent agents able to repair or maintain legitimacy by developing justifications out of a plurality of forms of agreement. Orders of worth provide sensegiving mechanisms (Douglas, 1986; Gioia and Chittipeddi, 1991; Rouleau, 2005), which furnish relevant stakeholders with discursive

and material resources with which to express agreement or discord. On the other hand, justifications are partly driven by stakeholders' autonomous agency and their vested interests in the institution at stake (e.g. nuclear energy defenders vs. opponents). A crucial agency-related issue is how the various stakeholder groups involved actually go about choosing justifications from the reservoir of available common worlds. First, conventional use of orders of worth reflects the home domain of particular stakeholders. For example, journalists will rely on the world of fame given their professional values, conventional frames, and categories of thinking when reporting news. However, in contrast to findings from prior research on institutional logics (Thornton and Ocasio, 1999, 2008), our study suggests that actors are not cognitively bound to their own professional or institutional sphere. Rather, they have the critical capacities to engage with a plurality of orders of worth when defending their position and claims in the public sphere (see Boltanski and Thévenot, 1999; Thévenot, 2007). Second, not all actors are equally legitimate in all fields. When developing justifications, institutional actors are influenced by both institutional conditioning (e.g. norms and values) and the rational calculation of vested material interests implicit in their respective institutional systems of valorization (Lounsbury, 2007). Therefore, the tendency of a particular actor instinctively to deploy arguments based on a particular order of worth is not simply a discursive 'tactic'; it is also a consequence of the nature of the institutional legitimacy of those arguments. In the case examined, stakeholders developed competing explanations of the same occurrences by mobilizing either alternative orders of worth (e.g. market vs. civic during the 'phase out' debate) or the same order of worth from different perspectives (e.g. the market as generating efficiency and competitiveness vs. the market as generating corporate greed and a diminished safety culture). By purposively developing arguments out of a plurality of logics, stakeholders pushed – knowingly or unknowingly – the controversy from one world to another and influenced the outcomes of the debate.

Implications for Management and Policy-Making

Our findings have important implications for both management and policy-making. The set of institutional arrangements within which organizations conduct their activity is subject to legitimacy tests which may threaten an organization's licence to operate. Legitimacy tests involve organizations in public controversies which require organizational spokespersons to construct convincing arguments and provide rationales appealing to various audiences' sense of justness. The temporal pattern of justifications used by Vattenfall suggests that managers and organizational spokespersons should anticipate as early as possible the politicization of controversies and adjust their discursive strategies accordingly. Discursive strategies aimed at maintaining a controversy within a purely technical arena or in a domain related to the organization's core business may appear to be safe options, yet they may fail to restore legitimacy when the heterogeneity of organizations involved in a controversy is high. Connecting the institution at stake with a plurality of orders of worth is a challenging task that may require more specific managerial training and skills, as recently illustrated by the oil spill crisis involving British Petroleum.

The present study also has important implications on the policy-making side. First, public bodies are usually regarded as legitimate defenders of the public good and as such

they have an important role in shaping controversies involving corporations. Our data suggest that public institutions and political parties engaged at a very early stage in the Forsmark controversy by actively linking the issue at stake to domestic and civic orders of worth. This move forced Vattenfall to acknowledge and discuss the broader implications of the incident as reflected in the progressive shift of its rhetorical strategy of justification. Second, our study highlights a complex process of controversy politicization whereby more and more orders of worth are invoked by an increasing number of actors. Political actors and other stakeholders influence the maintenance of an institution in supporting or undermining corporate justifications through their own discursive practices. Policy-makers and governments thus play a crucial role in legitimacy maintenance by bringing new orders of worth into the controversy. Once again, the recent oil spill crisis in the Gulf of Mexico involving BP and the US government provides an instance of legitimacy testing and points up the role of governments' justifications in shaping the public debate on off-shore drilling.

Finally, we acknowledge that our analysis has been based on a single-site case study, and that the dynamics of legitimacy maintenance outlined here are specific to the empirical setting in which the study was conducted. However, whilst we cannot generalize empirically from these unique patterns of behaviour, we can envisage that similar patterns will occur in other situations where controversies arise and organizations engage in justification vis-à-vis a public audience. In this regard, further research should be conducted in other national contexts, public and private institutions in order to verify and extend the arguments presented here. Such research could further develop the integration of institutional concepts such as institutional logics with constructs from the conventionalist tradition in economic sociology and its most recent developments articulating pragmatism and critical theory (Boltanski, 2009). In particular, these recent developments provide crucial resources for conceptualizing the role of agency and power in institutional processes.

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NOTES

[1] In a subsequent work, Boltanski and Chiapello (2005 [1999]) introduced a new 'projective city' reflecting the renewal of work organization in contemporary capitalism. We do not consider this city in the present paper for the following reasons. First, this new city is not as firmly grounded in prior political works as the six original cities, and its empirical plausibility is not yet fully established. Second, this city has a specific status because it refers to intra-organizational processes and it is transversal to the other cities. These two characteristics make its empirical operationalization too complicated in the context of the present study, which focuses on inter- rather than intra-organizational processes.

[2] Vattenfall is the fifth biggest energy utility in Europe. Following liberalization of the German energy market in 1999, Vattenfall Europe was founded in September 2002 as a result of the merger of four German energy providers: BEWAG, HEW, LAUBAG, and VEAG. Vattenfall is today one of the leading energy suppliers in Germany.

[3] On 20 January 2010, the federal government met with the country's top four energy providers to discuss possible extensions to the lifespan of nuclear power plants. The utility companies and the government agreed to allow all Germany's 17 nuclear power plants to keep operating until the current government finalized its general energy programme, expected in October. While the government played down the meeting as 'routine,' anti-nuclear activists protested throughout the day. On 20 October 2010 the government extended the operating life of these power plants by 12 years on average. Numerous demonstrations took place during September and October 2010, ahead of the government's decision. Although atomic energy would help Germany meet its commitments to cutting carbon emissions, these demonstrations illustrate the vivacity of anti-nuclear feelings within the German population. Recent developments have strengthened the position of the Green party and suggest that the controversy over nuclear power plants' lifespan will remain central to German political debates in view of the next political elections.

[4] By and large, we did not identify any important discrepancies between the coded passages and the original 'common worlds' and we only made a few adjustments in order to maintain the distinctive aspects of the common worlds. Yet, in the specific case of the 'domestic world', the coded material emphasized the interpretation of this world as a 'geographical territory and shared history and patrimony' more than as a 'family' more strictly defined. Hence, we relied on descriptors such as: 'territory', 'local', and 'proximal' to identify the presence of this world. Most of the case material coded under this 'common world' reinterpreted the accident in light of the history of nuclear energy in Germany and reflected the fear of seeing a similar accident happen on German territory. Although this interpretation of the 'domestic world' is narrow, it remains consistent with Boltanski and Thévenot's (2006) original definition, which focuses on belonging to the same household and territory and refers to family metaphorically rather literally: 'In this domestic polity. . . the familial analogy refers less to blood ties, here, than to the fact of belonging to the same household, as a territory in which the relation of domestic dependence is inscribed' (p. 90).

[5] Höglund himself was described by the press as someone who had once worked for Vattenfall and was now interested in profit-making, as illustrated by the following quote: 'Since his exit from the Forsmark operator at the beginning of the 90s, Höglund has – mainly without success – tried to get consultancy work from the Swedish energy market. And because he felt penalized by the tendering process, he took the Forsmark operator – whose majority shareholder is Vattenfall Europe, which is also active in the German electricity generation market – to court, claiming massive compensation. Therefore, one can hardly speak of his independent judgment on the incident at the Forsmark reactor' (09.08.06, BZ).

[6] The two groups representing the Green movement (Green NGOs and Green political party) have been assumed to be to the left of the SPD and yet to the right of the Left party. The Green NGOs often defend positions that make them arguably closer to the Left party than the Green political party in their overall positioning.

[7] Based on our first order analysis and the content analysis, we classified as opponents to the development of nuclear energy: Green NGOs, the Greens, the SPD, Höglund, the German Media; we classified as supporters of the use of nuclear energy: Vattenfall, the various institutions promoting nuclear energy and nuclear energy security such as SKI, as well as the nuclear experts.

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