

Article

Discursive multivocality: how the proliferation of economic language can undermine the political influence of economists

Georg Rilinger  *

Max Planck Institute for the Study of Societies, Köln, 50676, Germany

*Correspondence: ril@mpiifg.de

Abstract

This article shows how the proliferation of economic language can undermine the political authority of economists. The argument emerges from a comparative case study of two early experiments with electricity market design. Relying on archival materials and 30 in-depth interviews, I examine why political actors ignored the advice of economists in California, while they deferred to the experts in the Pennsylvania, Jersey, Maryland (PJM) region. The debates were framed in economic language, but stakeholders interpreted central concepts differently without recognizing the resulting ambiguities. This ‘discursive multivocality’ undermined economists’ authority as experts. It challenged economists’ monopoly on the interpretation of economic concepts and undercut rhetorical strategies to reassert the superiority of their understanding. At the PJM Interconnect, the experts overcame this problem by switching to a different conceptual apparatus. Ironically, economists could establish their authoritative understanding of economics by appealing to a shared understanding of engineering problems.

Key words: economics, professions, discourse, science, trust, regulation

JEL classification: Z1 Economic Sociology, A14 Sociology of Economics, D47 Market Design

1. Introduction

The political influence of economics is a controversial topic. One side describes economics as the ‘queen of the social sciences’, and attests to it a widespread influence on politics (Blyth, 2002; Fourcade *et al.*, 2015; Christensen, 2017). Yet, research on the ‘crisis of expertise’ (Eyal, 2019) reports the opposite finding. It finds that politicians either ignore advice from ‘policy sciences’ like economics or use it as rhetorical ammunition in ideological battles

(Bechmann, 2003; Maesen and Weingart, 2005). An emerging literature on the ‘social studies of economics’ (Maesse *et al.*, 2022) argues that these contradictory findings largely result from conceptual ambiguities. The analytical object ‘economics’ is blurry and can simultaneously refer to people, groups, ideas, techniques or combinations thereof. Economics may be influential in certain ways, while powerless in others. Accordingly, the literature now differentiates institutional, cognitive and professional dimensions of economics and explores how social processes mediate their influence (Hirschman and Popp-Berman, 2014).

However, few studies have examined the relationships between these different avenues of influence. In particular, research has not yet analyzed the relation between the influence of economists and that of economic language. These two are slightly different forms of influence. The influence of economists refers to the political authority of economic experts. Are academically trained experts able to assert control over political decisions? The influence of economic language concerns the degree to which economic concepts and ideas proliferate to frame political debates more generally and across professional groups. Do actors in political processes use economic ideas to frame their thinking or do they invoke other sources of knowledge?

These two lines of influence could be mutually reinforcing: people who already find economic ideas compelling might also be more prone to defer authority to economic experts. But this does not have to be the case. For example, academics typically reject the ‘free market optimism’ that is often taken for granted in political debates. Here, politicians’ use of economic concepts clashes with claims by economic experts (Banerjee and Duflo, 2019). Given that the two sides can be at odds with each other, what determines their relation? Under what conditions does the proliferation of economic language in politics prevent or enable economists to assert control over political decisions?

In this article, I begin to explore this question with a comparative case study of electricity market design. This is a domain where questions about the political influence of economic experts are particularly crucial. Electricity systems are very complex and vulnerable to disruption. Their operation must follow narrowly defined, technical standards. It is therefore not trivial to introduce markets for the coordination of electricity systems. The rules must carefully align the actions of market participants with technical requirements and misspecified rules can have devastating consequences (Cramton, 2017)—as the recent blackouts in Texas and California remind us. For the markets to work as intended, academic economists with specialized expertise in ‘market design’ must be able to take control of central design decisions in political negotiations. This can be understood as a negotiation between three groups. Economic experts—the highly specialized market designers—are trying to convince a potentially heterogeneous group of decision-makers. These *audiences* can be regulators, politicians or other stakeholders. They include anyone who has the power to decide whether the question can be deferred to the experts. In trying to convince these audiences, the economists are often competing with other stakeholders.

Because the resulting negotiations are typically framed in economic language (Reverdy and Breslau, 2019), we can explore how the use of economic language affects economists’ ability to wrest control over political decisions from their audiences. That is, I ask how the discursive dynamics of the negotiations affect market designers’ ability to convince their audiences to cede control over design decisions.

Following a ‘most-similar’ research design (Seawright and Gerring, 2008), I study this issue by comparing early cases of market design in California and the Pennsylvania, Jersey

and Maryland (PJM) region during the 1990s. In both cases, academic economists from prestigious universities tried to influence essentially the same decision under similar conditions. But while they managed to assert control in the PJM region, they failed to do so in California.

To explain the difference, I first identify a mechanism that blocked economists' strategies to assert control. What I call 'discursive multivocality' is a way in which the use of economic language can undermine the political influence of economists. Then, I show that differences in the intellectual background of these audiences provided opportunities to solve this problem in PJM, but not in California.

The article first develops this argument theoretically. It starts by considering how economists exercise influence over political questions. Like other experts, they use rhetorical strategies to convince their audiences that policy questions are 'technical' rather than 'political' issues and that the experts should be responsible for the corresponding decisions. These strategies aim to shift the framing of the debate onto the terrain of the experts' economic knowledge (Brint, 1990). To audiences, who are less familiar with this language, this makes visible a knowledge asymmetry between themselves and the expert. In light of this asymmetry, audiences then defer judgment and trust the expert to decide the question (Eyal, 2019).

What I call 'discursive multivocality' undercuts such rhetorical strategies. The term refers to situations where the experts' audience and competing stakeholders use *economic* concepts in a way that is objectively ambiguous but subjectively certain—the concepts appeal to different actors in different ways, but the audiences do not recognize this ambiguity. In such situations, economists' have no stable baseline against which they could establish their superior understanding of economics. To the audiences, their arguments will not appear as masterful displays of deeper understanding, but simply counterintuitive and wrong. This makes it hard for economists to establish their authority as experts. To the extent that the diffusion of economic language leads to discursive multivocality, it thus undermines the political influence of economic experts. The experts may yet solve the problem by switching to a more univocal framing, effectively leaving the contested terrain of economic concepts. But this depends on the availability of such a framing on the side of the audiences. The intellectual background of economists' audiences is thus crucial for the success of their rhetorical strategies.

Based on rich archival materials from two archives and 30 retrospective in-depth interviews, I then demonstrate this argument empirically. During the market design process in both California and PJM, stakeholders suggested that it might be a good idea to separate the markets from the organizations that managed the transmission grid. This so-called 'separation-provision' violated the principles of market design. Not only would such separation create tensions between the logic of markets and the physical properties of electricity systems, attempts to implement it would create opportunities for market manipulation. Academic economists from some of the countries' most prestigious universities, therefore, opposed the separation provision. In competition with other interest groups, they tried to convince the decision makers to defer the question to them. However, while the experts succeeded in PJM, they failed in California. This defeat would have dire consequences. California's design created flaws that sellers could use to extract astronomical profits and destabilize the system, thus contributing to the Western energy crisis of 2000–2001 (Lambert, 2006).

To explain designers' differential ability to control the political decisions, I show that the debates in California and PJM were indeed characterized by discursive multivocality. That

is, I analyze the negotiations between economic experts, their audiences and the competing stakeholders. As I show, the different groups relied on three mutually inconsistent ways to imagine and reason about markets: as algorithms, as evolutionary processes or as static places. But instead of recognizing the underlying differences, they acted as if the different groups shared the same baseline understanding and treated disagreements as a matter of empirical fact. This derailed economists' rhetorical strategies in California. Without a common baseline, their attempts to demonstrate audiences' inferior understanding simply seemed counterintuitive and wrong.

At PJM things went differently. While the debates featured a similarly complex mix of stakeholders, the designers had to convince a narrower audience of decision-makers: utility executives and regulators with engineering backgrounds. This allowed them to switch to a more univocal engineering language. By showing these audiences how design decisions related to familiar engineering problems, the economists gave them a stable way to assess the validity of their interpretation of economic concepts. Ironically, designers had to shift from an economic to an engineering framing in order to justify their claim to a superior understanding of economics.

The conclusion summarizes the argument and draws out its implementation for research on the political influence of science as well as the social studies of economics. First, the article shows how the political influence of economic language can undermine the influence of economists when it leads to discursive multivocality. Second, the article highlights that experts' efforts to assert control over political questions always hinge on the perception by their audiences. The audiences' intellectual baseline determines whether scientists' efforts to exercise political influence will be compelling.

2. Discursive multivocality and the political influence of economists

Not much research has explored the relationship between the political authority of economists and the influence of economic language. The existing research falls into roughly three camps. Institutionalist work explores how economists gain influential positions in government and administrative bureaucracies (Bernstein, 2001; Bockman and Eyal, 2002; Henisz *et al.*, 2005; Bockman, 2011). The literature looks at the personal and financial relationships between academics and state officials (Mirowski, 2002), the structure of the profession (Fourcade, 2009) and its relation to other professions (Fourcade *et al.*, 2015). While some work has found that the culture, methods and norms of the academic discipline help economists to do so (Hirschman and Popp-Berman, 2014; Christensen, 2017), few studies have asked how economists exercise influence once they are in powerful positions.

This is a topic in the second line of research, which is informed by Science and Technology Studies (Callon, 2007). It explores the creation of socio-technical devices—heterogeneous configurations of objects, ideas and people (Muniesa *et al.*, 2007). These devices are infused with economic knowledge and give rise to new forms of economic agency, which then 'perform' the assumptions of economic theory (MacKenzie *et al.*, 2007). The creation of socio-technical devices is an inherently political process. Actors negotiate with each other on the basis of their perceived interests. If economic knowledge provides the conceptual framework for these negotiations, it may shape what counts as a legitimate argument and who is a legitimate participant. To the extent that they can influence the framing, economists

may therefore have more or less influence on the negotiation of the device (Nik-Khah, 2008; Reverdy and Breslau, 2019).

A last line of research draws on the literature on professions and expertise (Medvetz, 2012; Eyal and Levy, 2013). It finds that economists are most likely to exercise influence on political decisions when the underlying issue is ill-defined. This is the case when political actors are dealing with a crisis, or at early stages of agenda setting (Eyal and Buchholz, 2010). At these junctures, economists have a chance to define questions in terms of their technical language. This bolsters their influence, because they now have the authority to decide which options exist or to present their own view as inevitable (Brint, 1990). Conversely, economists are less able to exercise influence over issues that are heavily politicized (Bernstein, 2001). If the issue does not appear technical, economists' expertise is quickly drawn into the battle of political contestation and is no longer perceived as neutral or objective (Jasanoff, 1992).

The three literatures thus converge on the insight that economists' political influence depends on their ability to control the framing of political debates and define issues as 'technical'. But why would that be the case? The more general literature on professions and expertise offers an answer (Abbott, 1988; Eyal, 2013). The relationship between expert and audience is defined by a knowledge asymmetry. An expert is someone who knows something the audience does not. To accept someone as an expert, audiences must thus gain the impression that they do not know what the expert knows. Niklas Luhmann captured this almost paradoxical character of the relationship by joking that, 'an expert is a specialist to whom one can put questions that he is unable to answer', quoted in (Bechmann, 2003, p. 23). The quip plays on the insight that someone counts as an expert in the eyes of the audiences when the audiences accept that they do not know where the limits of the experts' knowledge are. If an expert wants to be seen as an expert, they must therefore convince the audience that they are ignorant about the expert's subject matter.

By defining the terms of the debate, the expert can effectively pull the conversation onto terrain that is unfamiliar to the audiences. They can then use their distinct style of reasoning and introduce conceptual tools that audiences do not have at their disposal. This leads audiences to recognize that they do not know how to wield the terms as effectively as the expert, and they become willing to cede 'jurisdiction' (Abbott, 1988) over the issue at hand. In other words, controlling the framing of the debate is important because it gives experts the opportunity to demonstrate to audiences the knowledge asymmetry that is the core of their claim to expertise.

Once they have pulled the debate on their terrain, economists can display their skill to establish the knowledge asymmetry. Trained experts can usually mobilize the language of their discipline with greater fluidity than outsiders. By drawing on the authority conferred by the 'mechanical objectivity of numbers' (Porter, 1995), and the 'no-nonsense' rhetoric of instrumental rationality (Aune, 2002), economists can showcase a superior understanding of, and training in, quantitative techniques that enjoy substantial respect among lay audiences. Economists might rely on these techniques to demonstrate flaws in audiences' reasoning. If the audiences use the concepts differently but are aware of the resulting ambiguities, economists can reclaim the right to clarify the correct meaning.

This strategy works best when the experts have a monopoly over the abstract knowledge that defines the core of their profession (Weingart, 1999; Haas, 2004). The less the audience knows, the more easily they are willing to cede jurisdiction. Hardly anyone doubts quantum

physics because people do not generally have strong intuitions about answers in that domain of knowledge (Eyal, 2019). However, the experts' knowledge should not be completely opaque either. To defer to the expert, the audience must also trust them. As Georg Simmel has observed, there is a 'weak form of inductive knowledge in trust' (Simmel, 2004, p. 178). Audiences must be able to evaluate at least a little bit whether the expert really knows something they do not. A certain 'intellectual proximity' (Mirowski and Nik-Khah, 2007) can therefore be helpful.

This suggests that economists' rhetorical strategies need to be carefully calibrated to different audiences. Research on the rhetoric of economists confirms this insight (Klamer *et al.*, 1988; McCloskey, 1998; Aune, 2002). Economists position themselves differently depending on the audiences they face. They speak as 'philosophers' when they deal with other economists, but shift rhetorical strategies and posture to match act as 'hired gun' or 'priest' when they deal with legislators and other lay audiences (Goodwin, 1988). Similarly, when economists try to convince politicians, they leverage social capital from other fields such as academic prestige or media visibility (Maesse, 2015). In each case, the goal is to strike the balance between establishing a common ground and demonstrating superior understanding.

However, these rhetorical strategies fail when the audiences and experts are caught in a debate that relies on the conceptual framework of the experts, but the terms are *multivocal*. The concept of multivocality was initially developed to explain the characteristics of 'robust action' (Leifer, 1991; Padgett and Ansell, 1993). Such actions can be interpreted coherently from multiple perspectives, which is usually advantageous. It gives political actors the necessary flexibility to react freely to changed situations. In the literature on expert authority, the concept sometimes describes experts' ability to present their knowledge compellingly to a variety of audiences (Menchik, 2021). But multivocality can also refer to symbols and artifacts and thus the discursive situation itself. Concepts are multivocal if groups have divergent interpretations of these concepts but are not aware of these differences (Ferraro *et al.*, 2015). A multivocal concept is *objectively* ambiguous but *subjectively* certain—it is obscured ambiguity.

Such 'discursive multivocality', as I call it here, threatens claims to jurisdiction. As different groups develop distinct interpretations of central concepts, these groups also develop their own styles of reasoning (Bucher *et al.*, 2016). Unaware that the experts are relying on different interpretations of core concepts, audiences will then perceive the experts' arguments not as superior, but simply as counterintuitive or 'wrong'. Since everyone has a different understanding, there is no effective agreement about what constitutes a performance of correct knowledge—the 'epistemic form' that settled how valid claims are made becomes unsettled (Suryanarayanan and Kleinman, 2013). Accordingly, attempts to convince audiences by masterfully wielding concepts, status symbols and techniques will invite doubt and incomprehension rather than awe.

The problem of discursive multivocality is based on the way experts' *audiences* use the language of the expert. The solution to this problem, therefore, depends on the audiences as well. Once political discourses are affected by discursive multivocality, economists may yet establish their authority by switching to less multivocal discursive terrain. This depends on the availability of a more univocal framework they can appeal to. Audiences with a homogeneous intellectual background may offer such a stable epistemic form. Economists can then reiterate their claims to jurisdiction over economic questions by appealing to this alternative framework.

In sum, discursive multivocality explains how the diffusion of economic language beyond the academy can undermine the professional authority of economists. Once the conceptual categories are sufficiently destabilized, there is no way to establish one's superior understanding from within these categories. One form of influence undercuts the other. I now turn to the case study which demonstrates this problem of discursive multivocality and how it may be resolved.

3. Electricity market design in California and PJM

This article is a comparative case study of political negotiations during the creation of electricity markets in California and PJM between 1993 and 1998. For most of the 20th century, vertically integrated monopolies produced, distributed and sold electricity in independent service territories. To introduce competition, the entire industry had to be restructured. The utilities handed over control of their transmission system to an Independent System Operator (ISO). This ISO became responsible for coordinating the balance of production and consumption on the grid. Since the ISO managed the physical operation of the system on the basis of command-and-control principles, the new set of wholesale markets were financial institutions. They traded obligations for the *future* delivery of electricity. Markets for delivery for the next or the same day were called 'spot markets', while longer term contracts were traded in 'forward markets'.

After divesting most of the generation assets, utilities now had to buy electricity in the wholesale markets before they could sell it to residential customers. Large industrial corporation could also buy energy in these markets. A variety of generation companies, municipalities and independent power producers acted as sellers. Financial intermediaries, so-called 'power marketers' like Enron or Mirant, made money by arbitraging price differences. Once these actors had finished trading in the spot-markets, the system operator tried to implement the resulting obligations as closely as possible. See [Figure 1](#) for an illustration of the basic structure and the most important stakeholders in the new structure.

During the political debates in PJM and California, one of the most contentious questions was if the spot markets and the system operator should be separated from each other or if they should be integrated in one organization (dotted line in the figure). Today, it is generally known that there is no way around an integrated system ([Cramton, 2017](#)). This has to

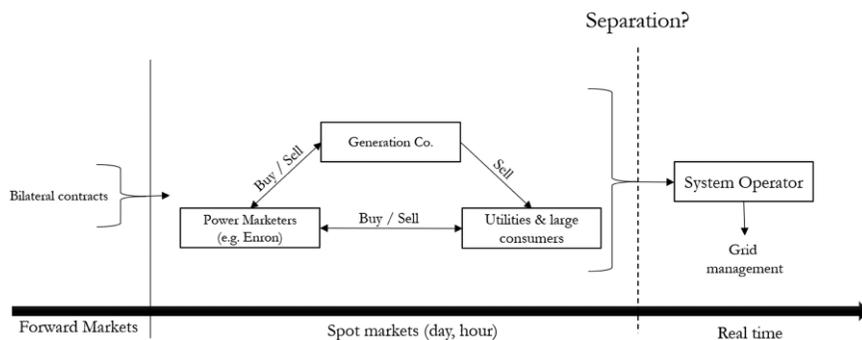


Figure 1 Illustration of basic market structure for electricity systems

do with the physical characteristics of electricity. To help coordinate the electricity system, markets must find the cheapest combination of generators to meet the demand at all locations at a given point in time. The transmission lines that carry the energy have limited capacity. To find the cheapest combination, it is, therefore, necessary to take transmission constraints into consideration. Since all energy flows interact with each other and affect the available transmission capacity, each adjustment to a generator can require changes elsewhere in the system. These dynamic interdependencies mean that the system must always co-optimize the generators' output and the use of transmission capacity. But the cognitive limitations of human actors make it impossible to represent the vast complexity of energy flows directly in the market. The system operator must compute the adjustments to the power flows, and ensure that a market for energy reflects their costs. This is only possible if the spot markets and the transmission system are managed by a single organization. Separating the two functions is therefore not feasible. Attempts to do so will always rest on compromise and mean that the markets will misrepresent the physical reality of the grid. This becomes the lynchpin for manipulative strategies which can bring down the system.

Industrial consumers first floated the separation provision in 1994. They wanted a system of bilateral contracts because their size would guarantee a favorable bargaining position to them. A centralized market would set a single market price and therefore deprive them of this advantage. Power marketers and independent power producers quickly supported the proposal. However, as soon as they suggested it, market designers tried to take the issue off the table. They acted as expert witnesses in the political debates and were unified in their rejection of the separation provision—even though they disagreed on a variety of other questions. Their intellectual credentials were spotless. They had developed the intellectual foundation for the restructuring project since the 1980s and hailed from prestigious institutions like Harvard and MIT. But while they managed to convince the stakeholders in PJM, they failed to do so in California.

The empirical question for this article is: what explains economists' differential ability to sway their audience? The case selection follows a 'most-similar' approach, that is, I select cases that are as similar as possible and only differ with respect to the outcome of interest (influence on separation question) as well as the main explanatory variable (the composition of the audiences) (Seawright and Gerring, 2008). Indeed, the two cases are similar in relevant ways. Though the two processes played out at opposite ends of the country, they took place around the same time and before the consequences of market separation were confirmed by the experiences during the California energy crisis. Both systems were based on new plans, which rendered existing experiences with electricity markets in Norway and the UK inapplicable. The issue itself was also the same in both regions—both were pondering the relation between markets and system operator. The overall composition of stakeholders was similar as well. In particular, the infamous power marketer Enron and independent power producers lobbied heavily for market separation in both regions.

Most importantly, some of the same economists testified in both cases. Particularly an economics professor from Harvard, William Hogan and his colleague Scott Harvey, a consultant with a PhD from U.C. Berkeley, played prominent roles. As one of the preeminent experts of electricity market design, Hogan led the charge against the separation decision in both regions. Though he was not the only expert who testified in both cases, he was the decisive influence on PJM's design, and he organized the Harvard Electricity Policy group, which was one of the centers of academic debate around electricity market design.

The main difference between the cases concerns the audiences that the economists needed to convince. This follows from differences in the institutional background. In California, the negotiations about separation primarily played out before the California Public Utility Commission (CPUC) and involved a heterogeneous mix of regulators, politicians and stakeholders. The CPUC made decisions on the basis of formal filings, open hearings and informal negotiations. Because the commission needed the political support of the most powerful stakeholders, it leaned heavily toward solutions that stakeholders worked out among themselves. Accordingly, the market design experts had to convince not just the regulators, but a heterogeneous group of power producers, lobbyists, politicians and end user representatives.

At PJM the debates included representatives of these interest groups as well. But PJM was an association of utilities that had cooperated for decades and across state lines. The member utilities had formal procedures in place to arrive at design decisions, which became the foundation for formal filings to the Federal Energy Regulatory Commission (FERC). Since the organization transcended state lines, Public Utility Commissions and state politics played a lesser role than in California. Utility executives and FERC regulators could therefore agree on design features without the explicit support of outside interests. Accordingly, the economists dealt with a similar configuration of competing stakeholders in the debates but had to convince a different audience: a more close-knit group of utility executives and FERC regulators who shared engineering backgrounds. The theoretical argument suggests that the audiences' conceptual frameworks set the baseline against which economists can demonstrate a knowledge asymmetry. By selecting cases that differ with respect to the audiences, I am thus selecting on the decisive explanatory variable: the intellectual background of the audiences that either affords or does not afford an alternative framing.

4. Data and methods

This study is primarily based on archival data. It consists of transcripts, comments, responses and evidentiary filings from regulatory proceedings that extended from 1993 to 1998. For the California case, I include proceedings before CPUC and FERC, for the comparison case, I rely on FERC's record alone. The so-called PJM Interconnect had gradually emerged from cooperation between utilities who had pooled their resources since 1927. The administrative entity first came into existence in 1993. Since its activities transcended state borders, most political debates took place before the federal regulator. Likewise, in California, the debates gradually shifted from the state to the federal level as the market design process progressed.

Both CPUC and FERC worked similarly. The commissions would publish a proposal or ask a specific question. Stakeholders and expert witness then submitted responses. In subsequent rounds, they reacted to these comments, which led to an argumentative back and forth. At several points, the parties came together to discuss the filings in person. For each case, I reconstruct debates during two periods: before (1994–1995) and after (1996–1998) the decision about market separation. [Table 1](#) contains information on the archival material I used for each period, the most important events and the dominant stakeholders in both regions.

It is important to note that the data for PJM is less complete than that for the California case. While the CPUC files contain verbatim transcripts of the debates about separation, the decisive PJM debates took place at the headquarters of the member utilities as well as a

Table 1 Archival material and timeline

Participant	Primary archival material	Timeline	Main stakeholders
California Before Separation (1993–1995)	CPUC Dockets R-94-04-31 and I.94-04-032, CPUC Central Files, San Francisco	<p>April 1994—CPUC publishes 'Blue Book' proposal for integrated market system</p> <p>June 1994—Industrial Consumers oppose integration and suggest a separation provision.</p> <p>June 1994—December 1994 In-person Hearings and Debates about market separation</p> <p>May 1995—CPUC Commissioners split between two proposals (majority: integrated, minority: separated)</p> <p>June 1994—August 1995, four rounds of comments and reactions by all participants of the proceeding (85).</p> <p>August 1995—Coalition of Stakeholders agrees on a memorandum of understanding (MOU), which determines that California will adopt the separation provision.</p> <p>August 1995—February 1996, two rounds of comments and debates about MOU. The separation provision becomes law.</p>	<p>Utilities: Southern California Edison (SCE), PG&E, SDG&E</p> <p>Industrial Consumer Associations: for example, CLECA, CMA</p> <p>Power Marketers: for example, Enron, Mirant, Williams, Merrill</p> <p>Producers, for example, Duke, AES, S</p>
California After Separation (1995–1998)	CPUC Dockets FERC Dockets ER96-1663, ER96-19, ER98-2843,	<p>1993 PJM Interconnect becomes an independent entity, administering pooling agreements of ten utilities</p> <p>1994–1995 Internal Debates about the Creation of Electricity Markets. PECO suggests separation</p> <p>1995: GPU and market designers convince other eight utilities to adopt integrated system</p> <p>July/August 1996: Majority files integrated market design proposal with FERC, PECO files minority proposal with separation provision.</p> <p>August 1996—April 1998: repeated rounds of comments and reactions after FERC rejects both initial proposals.</p>	<p>10 utilities: for example, PECO, PEPCO, GPU</p> <p>Power Marketers: Enron</p> <p>Producers</p> <p>Independent Power Producers</p>
PJM Before Integration (1993–1995)	FERC Dockets RM-95-8; RM94-7-001		
PJM After Integration (1996–1998)	FERC Dockets ER96-2516-000; EC96-29		

Note: FERC dockets are available through the online filing system: <https://www.ferc.gov/ferc-online/elibrary>

'management committee'. These negotiations have not been preserved in the archival record. However, the shifting positions and arguments still entered the FERC dockets. First, during a FERC proceeding on industry restructuring in the USA and then after the majority of the PJM utilities tried to get approval for an integrated design from FERC. In these dockets, the member utilities and other stakeholders articulated their changing arguments and positions about the design of PJM's markets. While the evidence on the process at PJM is thus one step removed from the phenomenon of interest, it still captures the evolution of the debate and market designers' attempts to assume control.

In addition to the archival material, I conducted 30 retrospective interviews with central protagonists of the debates. These are a subset of 76 interviews that were conducted for a larger research project on the Western Energy Crisis. Selection was based on a mixture of snowball and quota sampling. I tried to speak to members from all important stakeholder groups and asked existing contacts for referrals to members of these different groups. Specifically, I interviewed market designers (six) who were present in both proceedings. For the California case, I added stakeholder representatives (nine) and regulators (five) who dealt with the separation issue between 1993 and 1999. For PJM, I interviewed central protagonists who were present when the majority of utilities decided to accept the authority of the market designers, that is, the utility executives (eight) and engineers (two). The interviews lasted, on average, between 60 and 90 min and were conducted over the phone, or in person when feasible.

The study is a comparative, qualitative case study (Yin, 2017). As outlined in the last section, I selected two cases that are 'most similar', except with respect to outcome (influence) and main variable (audience composition). I developed the theoretical argument about discursive multivocality during the analysis of the California case. I then used the second case for strategic comparisons and examined whether the theory could account for the different outcome at PJM. I triangulated the archival material with the in-depth interviews but used the interviews only to contextualize and elaborate on the archival material. This minimized the danger of recollection bias and retrospective rationalization.

The data analysis followed a grounded theory approach (Charmaz, 2014) that moves iteratively between data and analytical categories. Unlike the classic statements by Glaser and Strauss suggested, contemporary versions of grounded theory are not purely inductive. Theoretical knowledge—that already informs the research design—guides the analysis of data in a circular process that moves between inductive, deductive and abductive moments. The goal is to let the data disconfirm theoretical expectations while simultaneously creating new ones. Moving iteratively from codes and memos to categories and theory, the back-and-forth leads to progressively more abstract theoretical insights. Early on, my theoretical focus on the rhetorical use of economic knowledge revealed that the parties' arguments were driven by different imaginations of electricity markets. Since such markets did not exist yet, people used various different analogies to imagine and reason about them. To establish this conceptual ambiguity, I coded for the competing imaginations, focusing on metaphors, underlying assumptions, themes. In a second read through, I tried to understand the impact of this ambiguity on the debates. Here, I focused on the rhetorical and performative dimension of the debates and followed the guidelines for 'dramaturgical coding' (Saldaña, 2015, p. 123). Similar to other forms of discourse analysis, this coding strategy aims to recover the performative logic of interactions. It identifies rhetorical moves and relates them to audiences' reaction. This allowed me to identify the two strategies that designers used to deal with

the different styles of reasoning: attacking discursive multivocality head-on, and sidestepping it by shifting to a different framing.

5. Analysis

The analysis proceeds in three steps. The first two steps seek to establish that the debates at PJM and in California were characterized by discursive multivocality. I show there were three disparate ways to reason about electricity markets (a). Then, I demonstrate that this ambiguity gave rise to discursive multivocality. The audiences did not recognize the objective ambiguity as the different groups disputed each other on the level of empirical claims (b). Finally, I show that this undermined economists' rhetorical strategies to establish jurisdiction in California and how the designers at PJM established their authority by moving to a different, univocal framing (c).

5.1 Three ways to think about electricity markets

Three distinct ways to reason about markets animated the political debates in California and at PJM. The economic experts—the market designers—relied on the first understanding. Their audiences and competing stakeholders were divided between the other two interpretations. The influence of economic language was thus pervasive in both settings and across professions, but it created a debate whose terms were ambiguous.

Market designers envisioned markets as *algorithms*. Their approach to electricity markets originated in the engineering departments at MIT and Harvard. It blended economics with control system engineering, computer science and system operations research (Mirowski, 2016; Breslau, 2020). To these designers, electricity markets are deterministic algorithms that solve optimization problems under constraints. In the case of electricity markets, the optimization problem is to find the cheapest combination of generators to meet demand at all locations, while obeying all transmission constraints. To solve this problem, the market must operate like a search algorithm ('a linear program') that iterates through a variety of constellations until it finds the globally optimal combination for a given time horizon ('the objective function').

From this perspective, competition is simply a situation where a set of incentives creates a particular type of informational input to the algorithm. It does not matter what institutional arrangement produces this input. The implementation of the algorithm and its abstract logic are distinct. The measure of markets' efficiency, further, is their ability to find the globally optimal solution to the complex optimization problem. How this solution relates, for instance, to individual preferences is secondary. Thus, design documents for one of California's new market organizations, the Power Exchange, frequently referred to the intended market process in terms like this: 'The Power Exchange will develop the preferred schedules using the submitted energy and load bids and a mathematical algorithm to optimize the schedule over the 24-hour evaluation period, and reflecting the operational characteristics of the generators'. The market collects 'bids', that is, informational input, and then 'processes' them to 'optimize' the result. In this vision, the market is not associated with a particular form of organization or social process. A market is simply a formal algorithm that processes information in a particular way.

Those with the algorithmic view could see that market separation was a bad idea. To them, the market was a tool to prepare the optimal dispatch of generation. This requires the

best way to use the transmission system, which can only be calculated by the system operator. Accordingly, market transactions about production and consumption must be closely coordinated by the system operator. Market separation is therefore dangerous and ultimately impossible.

The second style of reasoning was in considerable tension with the designer's idiosyncratic approach. It was particularly popular with competing stakeholders who had little expertise about electricity systems—mainly power marketers, but also consultants—and some of the audiences—CPUC regulators, consumer representatives and independent power producers. The style was ideological and matches standard accounts of 'neoliberalism'. Markets here appear as perfect, evolutionary systems. Jeff Skilling, the CEO of the power marketer Enron, defended the evolutionary point of view whenever he had the opportunity. He stated, for example, that 'only the relentless, unyielding pressure of competitive markets creates the impetus for massive, broad-based and continuous innovation and initiative to reduce costs and improve service quality to customers'. The president of the CPUC, Dan Fessler, also adopted this generic view when he proclaimed: 'the competitive model to me means that electricity is a commodity to be traded in an open, transparent market. And competition ultimately means that customers will have the benefit of choice'.

This understanding corresponds to a style of thought that dogmatically applies the same logic to arbitrary allocation problems, regardless of what the underlying industry might look like. In this vision of the self-regulating market, competition is understood in terms of a generic social logic. Sellers compete to sell their commodity to buyers. Largely disembodied, rational buyers examine different offers and choose the cheapest one. This decentralized process of competition creates constant pressure to innovate and reduce costs. This weeds out inefficiencies and leads to the best possible industry organization. Efficiency is understood, blurrily, as the cheapest way to produce and sell a commodity. The following quote from a power marketer at PJM encapsulates this idea: '[decentralized competition] abolishes ineffective, centralized planning and new generation, and replaces it with an open market structure that will lead to greater efficiencies'.

Though the precise trajectory of the markets' evolution is unpredictable, it is always guided by the invisible hand that ensures equilibria between supply and demand. Since we cannot know how the market will achieve this marvelous result, any attempt to 'regulate' the perfect engine of progress is doomed to failure and merely distorts the market. Things work best when market participants have complete freedom to negotiate deals on a decentral level.

This perspective suggests that market separation is necessary and important. Since it defines markets as decentralized competition, it is inconceivable to structure market activities in a centralized organization. This would not be a 'real' market and it would stifle the kind of decentralized innovation that drives efficiency. Since it has a generic view of markets, this perspective also does not recognize the technical connection between production and transmission of electricity. Just like sale and delivery of pig bellies can be sorted out separately, the production and delivery of electricity can be too. As a power marketer put it: 'the physical system continues to operate in whatever manner is necessary [...] at the end of the contract term, the physical people tell the contract people what actually happened and imbalances are charged and flowed to the customer'.

Apart from this evolutionary understanding, there was a third interpretation of dominant economic concepts. Here, the market appeared not as an algorithm or evolutionary process,

but as a static *place*. It characterized the position of several utilities and large industrial customers—crucial audiences for the market designers. This understanding drew from Industrial Economics, empirical studies of the electricity industry, and the deregulation of other network industries, particularly natural gas.

Markets are places where buyers and sellers come together to strike deals with each other. Generators have specific locations in space; transmission lines connect them to consumers. Striking a deal depends on the ability to meet, make a contract and then move energy from generator to customer. This understanding comes through in statements like these: ‘How do we attract more generation in strategic locations in the marketplace?’ or ‘People in a marketplace will price congestion. They will price higher across constrained paths than across un-constrained paths’. In these quotes, buyers and sellers meet in a place and need to deal with physical problems of transporting energy. Transmission lines can be ‘congested’ and prevent the transport of energy.

A central organizing concept of this understanding was the ‘contract path’. The idea suggests that it is possible to draw a path from a generator to a consumer and then transport the energy along that path. Since real energy flows mix and interact, it is not actually possible to draw such a path. But in the past, FERC and utilities had used the idea as a ‘convenient fiction’ to price the cost of transmission. Accordingly, the idea was lodged into the legal dogma of FERC’s regulatory approach and powerfully influenced audiences’ reasoning. Though it was a fiction, it suggested that electricity markets could be understood like any other market with ‘network externalities’.

Like the evolutionary style of reasoning, this understanding of markets emphasizes decentralized negotiations between individuals. Competition is a situation where buyers and sellers negotiate contracts. But unlike the evolutionary model, the market is not in a process of constant transformation, and it is not disembodied. Rather, the market is a relatively static place where the same products are traded over and over again. The main problem is distortions to the negotiations between parties. Such distortions occur when some sellers can exclude others from competition by, for example, blocking parts of the transmission system. An efficient system is one where the obstacles to trade are minimal.

From this perspective, market separation was not a decisive necessity, but also not impossible. Proponents of this view recognized that markets have to be aligned with the work at the ISO. But the contract path suggested that bilateral contract could specify how electricity would move through the system approximately. Accordingly, there would be only minor mismatches between contracts and grid management. These could be easily corrected by the ISO. Accordingly, there seemed to be no particular need to integrate the markets closely with the operation of the grid.

In sum, there were at least three different ways in which the market design experts, their audiences, and competing stakeholders understood central concepts such as competition, markets and efficiency. The conceptual foundations of the debate were thus ambiguous, and each framework led to different intuitions about the feasibility of market separation. [Table 2](#) summarizes these three basic frameworks.

5.2 Discursive multivocality

I will now show that the objective ambiguity combined with subjective certainty, thus leading to discursive multivocality. Economists, their audiences and the competing stakeholders made arguments that presupposed different frameworks (objective ambiguity), but did not

Table 2 Background understanding of economic concepts PJM/California

Stakeholders (primary users bold)	Market	Competition	Efficiency	Is regulation required?	Separation?
Academic Market Designers	Deterministic algorithm	A situation when incentives are set to create correct informational inputs to the algorithm	Ability to find globally optimal solution to allocation problem	Yes, centralized control is crucial	No, physically impossible and inefficient
Power Marketers, Consultants, Politicians, Generating Co.	Decentralized evolutionary process	A struggle for survival that produces constant innovation	Low prices and low cost at a maximum of innovation	No, market is perfect and regulates itself	Yes
Utilities, Generating Co., Industrial Users	Static place, where buyers and sellers come together to trade real, physical commodities	Relatively stable structure of decentralized negotiations between buyers and sellers who must be able to reach each other physically via a contract path	When there are no market failures that go back to physical or economic obstacles	Yes, regulation must resolve market failure	Yes, but with regulatory oversight

address these conceptual disagreements. Instead, they treated the debate as if they agreed on the framework and merely disagreed about matters of fact (subjective certainty). Since this is a subtle problem, I will illustrate the issue with one extended example from the debates in California.

In 1994, the CPUC published a proposal for an integrated system. This so-called 'PoolCo' proposal imagined that the system operator would run the markets as a centralized auction. The competing 'direct access' proposal demanded that decentralized markets for bilateral contracts would be separated from the system operator. In its comments, Enron made the following argument against PoolCo:

Whether or not the Commission centralized the scheduling and operation processes for the sake of reliability, it should *not* centralize the market clearing mechanism [...] Centralized control over the physical market would substantially reduce the economic advantages associated with the proposed industry restructuring. A market-based approach to the electric market benefits consumers through the combined effect of two forces: 1. Choice of service and 2. Choice of supplier. [...] A centrally controlled market offers the hope of multiple suppliers but not the choice among services which enables consumers to get the full benefit of an efficient market. In a centrally controlled market, the government, the grid owner(s) or some other organization will decide what types of physical delivery services the market needs [...] A simple analogy will reveal the fundamental problem: if the housing market were centrally controlled, a central board or regulatory agency would decide what choices were available.

This argument *presupposes* the evolutionary understanding of markets. The comparison with the housing market shows that they viewed electricity as a generic commodity. The argument also assumes that 'real' markets are decentralized negotiations between buyers and sellers—this informs the rhetorical thrust of the comparison in the last sentence. The phrase 'whether or not' in the first sentence also suggests that Enron views it as a matter of political preference if the 'market clearing mechanism' can be separated from grid management 'operation processes'. In other words, the argument depends on the evolutionary point of view. However, these assumptions are not justified and discussed. Instead, the thrust of the argument is about an empirical matter: whether a centralized market would give customers the choice between different services.

A representative for one of California's three big utilities, Southern California Edison, responded like this:

This concern [about the choice of services] has no applicability with regard to Poolco. Poolco, like the English Pool, would provide market participants with complete freedom either to (1) purchase from the pool at spot market prices or (2) enter into bilateral trades with any party that provides for any prices, quality, or characteristics of service that the parties so choose. [...] If marketers can add real value by developing contracts that offer consumers guaranteed prices for interrupted service or virtually any other tailored service [...] they are free to do so. Once a pool is in place that allows buyers and sellers to have an assured source of efficiently produced power, the market can decide which financial instruments are valuable. [...] The first priority should be to establish an efficient market for the actual purchase and sale of power, not to facilitate the creation of hedging instruments.

Rather than contesting Enron's premises, Edison responds on empirical grounds and suggests that the pool is compatible with a variety of different services that consumers are free to choose: 'Poolco [...] would provide market participants with complete freedom...'

Implicitly, however, the argument presupposes the *algorithmic* idea of markets and is incompatible with Enron's evolutionary view. Edison simply states that 'a pool [...] allows buyers and sellers to have an assured source of efficiently produced power'. This presupposes that centralized organization is an asset rather than a problem—because it best executes the search for the optimal dispatch of production and consumption.

The argument only works if you *assume* that the market is an algorithm. From the evolutionary point of view centralization is the problem—because it blocks innovation and free competition which are by definition decentral. In other words, the arguments are ultimately incongruent. They hinge on different conceptual ideas about what an 'efficient market' actually is (objective ambiguity). Rather than recognizing and discussing this ambiguity, the parties act as if their argument resides on the level of empirical facts, presuming that their respective framings integrate the debate (subjective certainty).

This discursive multivocality became even more pronounced when large industrial customers entered the debate and tried to argue for a compromise. They state that it might not be necessary to decide the issue in the first place. Rather than mandating the creation of a centralized market, the politicians might simply leave it to the market to decide the issue. If it is necessary, the market will give rise to and sustain a centralized entity. They argue that 'the experience to date in the restructuring of the natural gas industry, in particular the development of regional market hubs performing pool-like functions, supports the conclusion that the marketplace can be counted upon to look after its own clearinghouse needs'. Again, the argument makes an empirical point: the natural gas markets produced hubs, so, electricity markets will too. But this argument presupposes that electricity markets are like other network industries. This, in turn, requires the assumption that power flows follow 'contract paths' closely enough to resemble natural gas flows and that the production and transmission *can* therefore be separated on the level of contractual negotiations. From the algorithmic view, the natural gas industry is not comparable to electricity systems. From the evolutionary point of view, there is no reason to *allow* the creation of centralized hubs. Accordingly, the argument is inconsistent with the positions it reacts to. Yet it ignores this conceptual incompatibility and makes an empirical point (hubs will emerge here as they have elsewhere).

In sum, the three arguments about the desirability of an integrated market rely on three different ways to imagine electricity markets. It was objectively ambiguous what the ideal electricity market was supposed to be and how it would work. But the competing stakeholders and decision-makers simply presupposed their own respective view and argued about matters of fact. The pervasive influence of economic language thus had the effect that the debate suffered from discursive multivocality. Though space prohibits further illustrations, this problem was pervasive. The question is now how this unrecognized ambiguity affected market designer's attempts to take over the separation decision.

5.3 Claiming and losing jurisdiction

Almost as soon as the first stakeholders suggested that market separation might be a good idea, academic market designers entered the proceedings and contested this proposal. Specifically, they pleaded with regulators and the decisive stakeholders that spot-markets *must* be integrated into the system operator and that this was not up for political debate. To wrest jurisdiction away from the political discourse, they relied on a variety of rhetorical

strategies that aimed to enforce the algorithmic understanding of markets and then demonstrate their superior understanding.

One way in which they did this was to make ambiguity visible. By challenging how their audiences reasoned about electricity markets, they tried to establish themselves as the authority to decide which framing was correct. For example, during a CPUC debate in 1994, William Hogan begins by pointing out that, ‘in this new era we’re going to have the delight in working on a problem where [...] most things that everyone knows to be true, aren’t. And because of that change in the world, we’re going to have to rethink many of the elements of the operation of the market’. Among these elements, he argues, is the idea that it is possible to separate the transmission of energy from the generation of energy and thus separate markets and grid management: ‘The distinction between short-run generation and transmission is false. They are actually parts of the same function. And separating the pricing is probably going to be as unnecessary as it would be difficult’.

The quotes show an attempt to unsettle the certainty that participants experience about the meaning of central economic concepts. After claiming that ‘most things that everyone knows’ are false, he argues that the proceedings are confused: ‘You’re getting a lot of submissions from people who are suggesting ways to think about these problems and what the criteria ought to be’. This cacophony of different voices, he suggests, puts the burden on the CPUC to establish how the basic principles of restructured electricity markets should be understood. In the next statement, he then argues that the CPUC might turn to the market designers for guidance: ‘A good next step, there’s a group in California, the Power Group at the University of California that published a nice document that went through your proposal and tried to distill principles under the headings of economic efficiency, equity, technical efficiency of transmission and distribution, [...]’.

However, this move failed to prompt deference. The next presenter simply ignored his appeal to define a common standard. He opposed Hogan’s call for an integrated system by claiming that

what is fundamental to understand about markets is they’re not something you can plan [...]. Nobody has any idea how to price transmission. There are economic theories of how to price transmission. Professor Hogan, for instance, has an extremely-articulated one. There are other, alternative economic theories, which also make a great deal of sense. What I urge the commission to do is to understand that it has to allow experimentation [...].

This argument does not seek to justify the speaker’s conceptual starting point. Instead, it presupposes the evolutionary view of markets—the only entity that can possibly know what is best, is the market. Not only does this argument reject Hogan’s appeal for a search of common conceptual ground (‘no one knows’), the rejection presupposes that *only* markets can know and are therefore the only way to solve the problem. In other words, the evolutionary view here renders Hogan’s argument implausible, rather than triggering a self-reflexive examination of the evolutionary view. Because the panelist already thought he knew how markets worked, he rejected any attempt to assert the algorithmic view from his evolutionary perspective. In this multivocal environment, the experts simply lacked an Archimedean point from which they could develop leverage to assert their framing. And indeed, this was generally the case. After Hogan and his commentators go on for too long, the CPUC president ironically ended the discussion with the statement that:

We have a problem in that it should be anticipated that in dealing with any group of distinguished citizens who are also called experts that it would be possible for them to take anything less than the 21 [minutes] of the allotted time for the entire period, and perhaps by precluding questions in this manner, one maintains one's posture as an expert.

He makes a joke here, but the statement is nonetheless revealing. He sees the market designers as citizens who *pose* as experts. Since the experts could not appeal to a common baseline of understanding, the attempt to establish their authority over the separation question fell flat.

There are many other instances when market designers tried to establish their superior reasoning and claiming the right to define the correct meaning of electricity markets. For example, researchers at UC Berkeley submitted and later published an article in which they refute 'folk theorems' about the electricity industry. The document denigrates alternative conceptualizations as unscientific and 'naïve'. Similarly, at FERC, market designers complained at one point that they were facing a 'looking glass world', denounced the members of utilities as 'out of their mind', and published scornful articles in the trade press. Each of these moves is followed by dense arguments that were explicated in highly technical language. The designers thus attempted to weaken audiences' confidence in their style of reasoning and then illustrate how things were 'really' done to prove the knowledge asymmetry.

But in each case, the participants simply ignored these rhetorical strategies and continued to rely on their own style of reasoning. Several of my interviewees remember disregarding the economists' advice. Experiences with 'bilateral contracting in the West' or 'how business is done' had been considered better bases on which to decide the question than academic analysis. They said that the 'economists did not know [what would be best] either'. Despite substantial rhetorical esprit, the attempts to undermine the 'folk theorems' fell flat. In a world where everybody seemed to know how to use economic reasoning, the market designers appeared as just one group with strange opinions. In the end, the issue was therefore settled not on the basis of economic expertise, but on the level of interest politics: a coalition of industrial users, a utility, and independent power producers produced a 'Memorandum of Understanding' that the CPUC adopted more or less wholesale. It represented a political compromise and violated core principles of market design.

To see how experts can overcome the problem of discursive multivocality, it helps to draw out the differences to the situation in PJM. Between 1993 and 1996, executives of the 10 utilities negotiated about the architecture of the new markets. One of the utilities, PECO, first suggested the separation as a way to overcome the impasse between two design proposals. These two alternatives were formally similar to the ones in California. PECO, in consultation with power marketers like Enron, proposed a decentralized market design with bilateral contracts. The utility GPU advocated for a centralized model. The other utilities were undecided. Given the divide between the utilities, the political negotiations were heated. 'There was a lot of politicking and the big politicking was between PECO on one side and PEPCO and GPU on the other side. [...] It came down to a continuous debate with the GPU group. [But over time] GPU/PEPCO began to win adherence'.

The decisive moment occurred after GPU had invited William Hogan and his colleagues to demonstrate their market design proposal to the management committee. At first, the executives did not buy the concept. Just as in California, most executives relied on either the ideological view of markets as evolutionary systems or on the view of markets as static

places. From these vantage points, the Harvard proposal appeared highly idiosyncratic. It advocated for an integrated design whose centerpiece was so-called Locational Marginal Prices. The approach relied on a centralized pool to integrate the pricing of generation with its transmission across the grid. The designers emphasized not only the need for centralized control but also the importance of complicated algorithms to estimate thousands of prices for every node in the system. Each location in the network could have a distinct price that reflected the marginal cost of changes to the dispatch structure that would result from changes at these locations. These prices would not be the consequence of negotiations, but would be centrally computed at the same time as the ideal dispatch was calculated from market bids. To adherents of the evolutionary or place-based understanding of markets this proposal seemed ‘unnecessarily complex’, ‘bloated’ and ‘constraining’, and even had a whiff of ‘centralized planning’, as some submissions stated. As in California, the situation was precarious for the experts. ‘[I] explained how that would work’, one designer remembers, ‘and their response was: “You are crazy”. They were telling me: “It won’t work what you are proposing, it just won’t work”’.

Confronted with insistent opposition, they gave up on attempts to unsettle the use of economic language. Instead, they switched to an entirely different framing. The executives at PJM had a very homogenous background because the leadership ‘tended to be people who came up through the engineering ranks’. The executives were familiar with the technical operation of utilities and knew the engineering problems that animate grid management. In addition, they had collaborated together for years and thus developed a similar baseline understanding of ‘how things were done’, as one executive put it.

The market designers therefore pivoted and began to advocate for their model in terms of a familiar engineering problem. They argued that the Locational Marginal Prices (LMP) model could be used to generate prices that would be consistent with the flow of energy across the grid, because the model was equivalent to the dispatch principles the engineers were already using. To demonstrate the validity of this claim, the designers created a ‘toy model’ that explained how the centralized structure related to the underlying characteristics of energy flows on the transmission network. Based on a highly simplified network with just a few nodes, the model demonstrated how the price at each node would represent the marginal cost of changes to energy flows. By optimizing this distribution, the market mechanism would find the combination of power flows that used the existing transmission capacity optimally. [Figure 2](#) reproduces an illustration of the toy model from one of Hogan’s submissions. The figure illustrates how the designers linked the engineering problem with the design proposal. It shows how prices in the market change when consumption increases at a network bus and affects the global configuration of power flows. The prices accurately reflect the cost of redispatch required for the optimal combination of generators.

By projecting the market onto a simplified representation of the grid, this tool allowed the executives to evaluate the market design in terms of criteria they were familiar with. Accordingly, they stopped arguing, took the model specifications, and asked their engineers to run power flow simulations that would determine whether the market mechanism actually arrived at the best dispatch structure. Hogan remembers the situation like this:

It took them about two weeks and then [the engineer] came back and he said: ‘I am exhausted.’ And, then, they started to think, maybe this actually would work and that was a huge moment

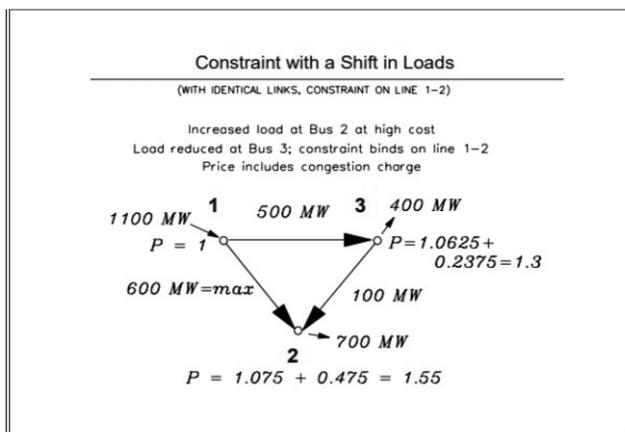


Figure 2 Electricity markets, toy model.

Source: Hogan, William (1993) 'A Competitive Electricity Market Model (Draft)', prepared for the Harvard Electricity Policy Group. Later submitted to: FERC docket RM94-20 as 'Coordination for Competition in an Electricity Market'. Referred to as decisive model for PJM, in docket, ER96-2516.

because then Bob Arnold was the spokesman for the rest of the people at PJM and said, we've tried everything else, maybe we got to talk to that guy Hogan.

Rather than trying to challenge the multivocality of economic language head on, the experts sidestepped the issue. They shifted away from the terrain of economic reasoning to a framing that was stable and univocal among the audiences. Since the audiences had a univocal understanding of engineering problems and well-established ways to evaluate claims—a stable 'epistemic form' that explained how evidence and reasoning had to be related to each other—the experts could appeal to this baseline. They could now demonstrate that the market design choices had consequences for engineering problems. Since the executives had *not* previously recognized how the design decisions would interact with engineering issues, the demonstration of this connection revealed to them that the designers understood the markets differently than they did. Suddenly, they recognized that 'these are not normal markets', as one executive put it. The ambiguity had become visible to them. Since they could now recognize market design expertise *as something they did not know about*, they were willing to cede jurisdiction to the experts. Having given up on their alternative interpretation of the market concepts, the 'separation fallacy' became obvious as 'dangerous and untested'. What the case shows is that the experts' ability to make ambiguity visible depended crucially on a framing that provided stable ways to contest substantive claims about economics.

6. Conclusion

This article has examined one set of conditions that mediate the political influence of economists. We have seen that economists can control political questions if they manage to define them as 'technical'. To make such claims to jurisdiction, economists try to frame the debate in terms of their abstract language. Pulling the discussion onto their turf, they can

demonstrate a knowledge asymmetry between themselves and their audiences. This leads audiences to recognize them as experts and defer judgment to them. Competing stakeholders then drop out of the picture and the economists decide on the basis of their expertise. This strategy fails when audiences and competing stakeholders have alternative ways to reason about economics and the resulting ambiguity is not apparent to the audiences. In that situation, audiences, competing interests and experts speak different languages, but the audiences are not aware that they do. This discursive multivocality undermines experts' attempts to claim jurisdiction. The PJM case illustrates that one way to avoid this problem is to switch to a different style of reasoning that is not based on multivocal concepts. This is possible if the experts confront audiences with homogeneous intellectual backgrounds. Somewhat ironically, the best way for economists to exercise influence was to stop speaking about economics.

The article makes two contributions to the literature. First, it shows that different avenues of economic influence can undermine each other. The argument resonates with the finding that the political uses of scientific knowledge weaken its perceived validity (Bechmann, 2003; Maasen and Weingart, 2005; Eyal, 2019). It offers another explanation for this finding. The problem is not simply that politicization makes economic knowledge appear partisan. Rather, the proliferation of different ways to reason about economics undermines the rhetorical tools that economists can use to establish their jurisdiction.

Second, this argument about 'discursive multivocality' suggests that we can better understand the political influence of scientists by paying more attention to the *audiences* they are trying to convince. The composition of decisionmakers ultimately determines whether claims to jurisdiction will be taken seriously and what standards will be applied to their evaluation. The study thus resonates with research stressing that the role of experts is inherently relational (Eyal, 2013) and suggests that both sides of the relation should receive equal attention (McCloskey, 1998; Maesse *et al.*, 2022).

The findings also suggest some avenues for future research. First, future research should explore whether the problem of discursive multivocality affects more disciplines than just economics. Economics is curious in that it appears unified to the outside, even though it is just as fragmented as all social sciences (Reay, 2012). Past research has argued that economics achieves this apparent homogeneity by organizing disparate research trajectories around a stable core of concepts and techniques that allow substantial, interpretative flexibility. The discursive multivocality of economics may therefore be a consequence of the unique organization of its academic core. Future research should explore whether experts in other fields confront the same problem or if they can prevent the discursive effects of obscured ambiguity.

Second, future research should explore interactions between other avenues of political influence. My findings are in line with the idea that science is most powerful when it closes itself off from political discourses (Weingart, 1999). But the dynamic behind discursive multivocality may be related to other factors that have been excluded from this study. It would be interesting to examine whether variation in the institutional position of economists influences their ability to control the use of economic concepts in politics. Research might also investigate how audiences stabilize alternative ways to reason about expert knowledge in the 'echo chambers' of social media.

We live in troubled times. The old hierarchies of truthmaking are crumbling. Audiences and competing stakeholders challenge experts in areas as diverse as medicine, climate science

and economics. Politicians increasingly create their own facts, and whole populations live in imagined worlds that seem to intersect only at the margins. In this world, it is crucial to understand what stabilizes or destabilizes the authority of experts to decide political questions. Since economists frequently position themselves as the managers of ‘the’ economy, practically all political questions could be drawn into their orbit. This makes questions about the nature, reach, and desirability of their influence on politics timely. This article has tried to explore one way in which one dimension of this influence might undermine another. In that way, economics may have been too successful for its own good.

Acknowledgments

I would like to thank Andrew Abbott, Timothy Elder, Garry Herrigel, Matthew Paul Ripley, Benjamin Rohr and two anonymous reviewers at SER for their constructive feedback on earlier versions of this paper. Thanks to Amanda Dixon for her amazing copy edits.

References

- Abbott, A. (1988) *The System of Professions: An Essay on the Division of Expert Labor*, Chicago, IL, University of Chicago Press.
- Aune, J. A. (2002) *Selling the Free Market: The Rhetoric of Economic Correctness*, New York, NY, Guilford Press.
- Banerjee, A. V. and Duflo, E. (2019) *Good Economics for Hard Times: Better Answers to Our Biggest Problems*, New York, NY, Penguin Books.
- Bechmann, G. (2003) ‘The Rise and Crisis of Scientific Expertise’. In Bechmann, G. (ed) *Expertise and Its Interfaces: The Tense Relationship of Science and Politics*, Berlin, Germany, Sigma, pp. 17–33.
- Bernstein, M. A. (2001) *A Perilous Progress: Economists and Public Purpose in Twentieth-Century America*, Princeton, NJ, Princeton University Press.
- Blyth, M. (2002) *Great Transformations: Economic Ideas and Institutional Change in the Twentieth Century*, Cambridge, Cambridge University Press.
- Bockman, J. (2011) *Markets in the Name of Socialism*, Stanford, CA, Stanford University Press.
- Bockman, J. and Eyal, G. (2002) ‘Eastern Europe as a Laboratory for Economic Knowledge: The Transnational Roots of Neoliberalism’, *American Journal of Sociology*, 108, 310–352.
- Breslau, D. (2020) ‘Redistributing Agency: The Control Roots of Spot Pricing of Electricity’, *History of Political Economy*, 52, 221–244.
- Brint, S. (1990) ‘Rethinking the Policy Influence of Experts: From General Characterizations to Analysis of Variation’, *Sociological Forum*, 5, 361–385.
- Bucher, S. V. Chreim, S., Langley, A. and Reay, T. (2016) ‘Contestation about Collaboration: Discursive Boundary Work among Professions’, *Organization Studies*, 37, 497–522.
- Callon, M. (2007) ‘What Does It Mean to Say That Economics is Performative?’ In MacKenzie, D., Muniesa, F. and Siu, L. (eds) *Do Economists Make Markets? On the Performativity of Economics*, Cambridge, MA, Princeton University Press, pp. 311–357.
- Charmaz, K. (2014) *Constructing Grounded Theory*, New York, NY, Sage.
- Christensen, J. (2017) *The Power of Economists in the State*, Stanford, CA, Stanford University Press.
- Cramton, P. (2017) ‘Electricity Market Design’, *Oxford Review of Economic Policy*, 33, 589–612.
- Eyal, G. (2013) ‘For a Sociology of Expertise: The Social Origins of the Autism Epidemic’, *American Journal of Sociology*, 118, 863–907.

- Eyal, G. (2019) *The Crisis of Expertise*, New York, NY, John Wiley & Sons.
- Eyal, G. and Buchholz, L. (2010) 'From the Sociology of Intellectuals to the Sociology of Interventions', *Annual Review of Sociology*, **36**, 117–137.
- Eyal, G. and Levy, M. (2013) 'Economic Indicators as Public Interventions', *History of Political Economy*, **45**, 220–253.
- Ferraro, F., Etzion, D. and Gehman, J. (2015) 'Tackling Grand Challenges Pragmatically: Robust Action Revisited', *Organization Studies*, **36**, 363–390.
- Fourcade, M. (2009) *Economists and Societies: Discipline and Profession in the United States, Britain, and France, 1890s to 1990s*, Princeton, NJ, Princeton University Press.
- Fourcade, M., Ollion, E. and Algan, Y. (2015) 'The Superiority of Economists', *Journal of Economic Perspectives*, **29**, 89–114.
- Goodwin, C. D. (1988) 'The Heterogeneity of the Economists' Discourse: Philosopher, Priest, and Hired Gun'. In Klamer, A. McCloskey, D. N. and Solow, R. M. (eds) *The Consequences of Economic Rhetoric*, New York, NY, Cambridge University Press, pp. 207–220.
- Haas, P. (2004) 'When Does Power Listen to Truth? A Constructivist Approach to the Policy Process', *Journal of European Public Policy*, **11**, 569–592.
- Henisz, W. J., Zelner, B. A. and Guillén, M. F. (2005) 'The Worldwide Diffusion of Market-Oriented Infrastructure Reform, 1977–1999', *American Sociological Review*, **70**, 871–897.
- Hirschman, D. and Popp-Berman, E. (2014) 'Do Economists Make Policies? On the Political Effects of Economics', *Socio-Economic Review*, **12**, 779–811.
- Jasanoff, S. (1992) 'Science, Politics, and the Renegotiation of Expertise at EPA', *Osiris*, **7**, 194–217.
- Klamer, A., McCloskey, D. N., McCloskey, D. N. and Solow, R. M. (1988) *The Consequences of Economic Rhetoric*, New York, NY, Cambridge University Press.
- Lambert, J. D. (2006) *Energy Companies and Market Reform: How Deregulation Went Wrong*, Tulsa, OK, PennWell.
- Leifer, E. M. (1991) *Actors and Observers: A Theory of Skill in Social Relationships*, New York, NY, Garland.
- Maasen, S. and Weingart, P. (eds) (2005) *Democratization of Expertise? Exploring Novel Forms of Scientific Advice in Political Decision Making*, Dordrecht, the Netherlands, Springer.
- MacKenzie, D., Muniesa, F. and Siu, L. (eds) (2007) *Do Economists Make Markets? On the Performativity of Economics*, Cambridge, Princeton University Press.
- Maesse, J. (2015) 'Economic Experts: A Discursive Political Economy of Economics', *Journal of Multicultural Discourses*, **10**, 279–305.
- Maesse, J., Pühringer, S., Rossier T. Benz and P. (2022) *Power and Influence of Economists: Contributions to the Social Studies of Economics*, London, Taylor & Francis.
- McCloskey, D. N. (1998) *The Rhetoric of Economics*, 2nd edn, Madison, WI, University of Wisconsin Press.
- Medvetz, T. (2012) *Think Tanks in America*, Chicago, IL, University of Chicago Press.
- Menchik, D. A. (2021) 'Authority beyond Institutions: The Expert's Multivocal Process of Gaining and Sustaining Authoritativeness', *American Journal of Cultural Sociology*, **9**, 490–428.
- Mirowski, P. (2002) *Machine Dreams: Economics Becomes a Cyborg Science*, New York, NY, Cambridge University Press.
- Mirowski, P. (2016) 'Information in Economics: A Fictionalist Account', *Schmollers Jahrbuch*, **136**, 1–22.
- Mirowski, P. and Nik-Khah, E. (2007) 'Markets Made Flesh: Performativity, and a Problem in Science Studies, Augmented with Consideration of the F.C.C. Auctions'. In MacKenzie, D.

- Muniesa, F. and Siu, L. (eds) *Do Economists Make Markets? On the Performativity of Economics*, Cambridge, Princeton University Press, pp. 190–255.
- Muniesa, F., Millo, Y. and Callon, M. (2007) 'An Introduction to Market Devices', *The Sociological Review*, 55, 1–12.
- Nik-Khah, E. (2008) 'A Tale of Two Auctions', *Journal of Institutional Economics*, 4, 73–97.
- Padgett, J. F. and Ansell, C. K. (1993) 'Robust Action and the Rise of the Medici, 1400–1434', *American Journal of Sociology*, 98, 1259–1319.
- Porter, T. M. (1995) *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*, Princeton, NJ, Princeton University Press.
- Reay, M. J. (2012) 'The Flexible Unity of Economics', *American Journal of Sociology*, 118, 45–87.
- Reverdy, T. and Breslau, D. (2019) 'Making an Exception: Market Design and the Politics of Re-Regulation in the French Electricity Sector', *Economy and Society*, 48, 197–220.
- Saldaña, J. (2015) *The Coding Manual for Qualitative Researchers*, New York, NY, Sage.
- Seawright, J. and Gerring, J. (2008) 'Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options', *Political Research Quarterly*, 61, 294–308.
- Simmel, G. (2004) In Frisby, D. and Bottomore, T. B. (eds) *The Philosophy of Money*, London, Routledge.
- Suryanarayanan, S. and Kleinman, D. L. (2013) 'Be(e)Coming Experts: The Controversy over Insecticides in the Honey Bee Colony Collapse Disorder', *Social Studies of Science*, 43, 215–240.
- Weingart, P. (1999) 'Scientific Expertise and Political Accountability: Paradoxes of Science in Politics', *Science and Public Policy*, 26, 151–161.
- Yin, R. K. (2017) *Case Study Research and Applications: Design and Methods*, 4th edn, New York, NY, Sage.