8. Growth Imperative Intermediaries, Discourse Frameworks, and the Arctic

ARTHUR MASON

The speed with which the future approaches the Arctic can be felt today in discussions on climate change, resource extraction, and sea transportation. Borrowing a phrase from Mabel Toolie, a Native elder of St. Lawrence Island, Alaska, the Arctic is a place "where the Earth is faster now" (Krupnik and Jolly, 2002: 7). But expert discussions taking place many miles from the North are also determining the speed with which the future is drawn into the Arctic present. The goal of these discussions is not directed toward the discursive shaping of the Arctic but toward exploiting the Arctic as a valuable energy extractive frontier. In particular, energy forecasts and scenarios created in office buildings and disseminated in hotel conference rooms are constructing the Arctic as hydrocarbon-rich and accessible landscapes.

The aim of this chapter is to improve the state of theory and knowledge in relation to forms of assembly and performance used by one group, intermediaries (consultants), to communicate economic forecasts of oil and natural gas development in the Arctic. I draw attention to conceptions of the Arctic energy future and the role played by expert formulations in elevating the interests of industry and government into actionable views thereby crystallizing an inner circle of participants with substantial powers. Unique access in unique social spaces contributes to a consultant expertise framework (Boyer, 2005; Mason and Stoilkova, 2012); this chapter expands the performativity thesis for a next generation of scholars involved in the anthropologies of finance, markets, futurity, and expertise, linked to science and technology studies–related genealogies.

The primary focus of this chapter bears on natural gas located at Prudhoe Bay on Alaska's North Slope, which, until recently, was regarded as an energy region capable of contributing significantly to North American energy security, representing nearly 10 percent of the resource base in the United States. In contrast to the drama of today's demand uncertainty, I employ a discursive characterization of the process by which intermediary knowledge shapes Alaska natural gas development

through a period of volatility in supply. Examining intermediaries draws necessary attention to privatized knowledge systems in the Arctic that license the intervention of experts in debates about emerging infrastructures, contracting regimes, and community development plans that accompany concessions being newly put into place at this moment. Energy development is one of several industries reliant upon intermediaries, and understanding the results of this reliance sheds light on a more general phenomenon across society.

Since midcentury, publics underwriting research with substantial tax revenues acquired "a stake in what science produces, just as science acquired stakes in making its findings useful as a basis for continued public support" (Jasanoff, 2011: 132). As such, democratization efforts filtered into the processes of scientific discovery for purposes of shoring up the legitimacy of public funding for science—by seeking citizen acquiescence to research that purported to guarantee eventual widespread commercial applications. This pattern of democratization is apparent in the North American Arctic where redefinitions of local knowledge have created new partners in scientific inquiry and new publics to which science has become accountable.

By contrast, the rise of intermediary experts (consultants) suggests a trend toward greater control over access and production of Arctic knowledge that is privatized via commodification. Public accessibility exists but without authority to determine limits of access. It is not uncommon, for example, in the Alaska oil and gas sector to locate references to the products of intermediary knowledge, such as those found in government and corporate publications concerning forecasts, journalist accounts, briefings from think tanks, financial groups, or environmental NGOs, that offer assessments of project development and focus on supply-demand interactions as primary agents for determining events. While such references are widely available, public access to commodified analyses of Alaska oil and gas development tend to be sequestered by their circulation as client privilege reports or minutes of costly executive roundtable meetings. Such analyses, while not publicly available, may be shared within the intermediary community. Several consultant organizations are increasingly forthcoming about their methodologies, pointing to the collective nature of their research process whereby analysts critically scrutinize each others' work prior to publication.

Thus, the unabashed economic motivation behind the rise of intermediary knowledge reflects a postwar expansion of expert systems as part of a broader movement to a knowledge economy. The growth of this type of economy itself provides justification of an apparent contradiction, on the one hand, of increased democratization of academic expertise, and on the other, the privatization of expertise by intermediary consultants.

Rise of Consultants

Energy consultants can be considered "intermediary actors" because of their success in mobilizing expectations (Beunza and Garud, 2007). The visibility of

these firms reflects a growing reliance on consultant advisory services that identify economic uncertainties and help industry actors have the capacity to be ready for them. By mediating an entire ensemble of relations about the energy industry, intermediaries may be seen as transnational agents who exert increasing control over economies once regulated in and through the national state (LiPuma and Lee, 2004). While interest in intermediaries is growing, there is little understanding of their specific type of expertise and how they create knowledge about Arctic energy development from specialized forms of study. Nor is there much information about the precise characteristics of knowledge produced or how their predictions exert complex forms of influence on Arctic oil and gas developments. These neglected areas suggest a need to characterize the role of intermediaries who create assessments and to develop analytical tools to allow researchers to carry out systematic study of these actors (Van Lente, 1993).

Figure 8.1 divides intermediary expertise into three practices for visualizing Arctic energy futures: assembling, mobilizing, and performing. *Assembling* refers to the process by which consultants build relationships with the Arctic largely by reference to practical understandings, but also through information technology (IT) systems such as Wood Mackenzie's Global Economic Model. For example, information-sifting is inherently selective and often depends upon high levels of embodied understandings usually developed through years of experience. By contrast, IT infrastructure such as Enterprise Resource Planning Systems employs a logic of conversion whereby the Arctic is abstracted and converted first into data, then into information, which is then mobilized as knowledge. While in the first instance, assembling renders (tacit) embodied knowledge explicit, in the second, technical systems redistribute calculative capacities from humans to machines.

Mobilizing refers to the presentability of the material and digital forms of consultant knowledge and their deployment. Specifically, consultant products (reports, memos, graphs, scenario narratives, PowerPoint slides) represent "integrated packages" (Knox et al., 2007) that capture a firm's activity of transforming information into knowledge that purports to have strategic decision-making value.

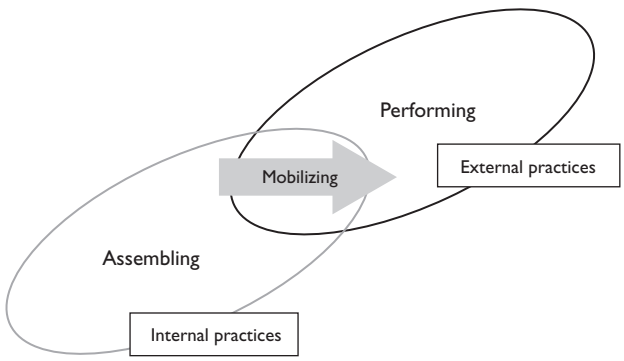

Figure 8.1: Assembling, mobilizing, performing

Finally, *performing* calls attention to forms of display, as in the specialized stance of intermediary expertise, such as its linguistic repertoire of technical terms, acronyms, and even nonverbal signs like facial expressions and gestures. Networking events are important performative locations. They entail spatiotemporal features such as the division of the given time into, on the one hand, plenary sessions that everyone can attend, and on the other, parallel sessions that participants must choose between. According to Wallace (2010: ch. 3), the allocation of individual and collective discussion through conferencing can represent "exemplary instances and instruments of future-management." At such events, consultants negotiate their ability to distribute assessments, which they hope will generate value, together with a simultaneous acknowledgment of the contingency of this aim. In these ways, intermediary expertise provides the possibility for industry actors to become conscious of an idea of futurity as singular and achievable. In doing so, consultants reduce complexity into knowledge that can form the basis of decisions that industry considers defensible and feasible.

Energy consultants emerged in North America in the mid-1980s during a period of energy market restructuring. Their initial duties included collecting, analyzing, and distributing information of relevance to buyers and sellers, including information about weather, demand patterns, and future prices of natural gas and other fuels. By the beginning of the twenty-first century, a much more elaborate system of advisory service had emerged, in which intermediaries rank future energy projects through combining technical prediction with new modes of communication, e.g., scenario planning and executive roundtables, making available what might be described as a "community of interpretation" on a commodified basis (Mason, 2007: 374). That is, through soliciting the opinions of a broad sector of industry, consultants begin to act as organizers of community knowledge for executives and government leaders about the future of energy systems and the viability of particular projects within these systems. Such knowledge begins forming the basis of strategic tools (Wood Mackenzie's Global Economic Model, for example) that are employed profitably by consultants through client fees for access. By enabling systematic and commodified access to community interpretations, consultants today provide the grounds for more formalized assessments of energy development projects. These have organizational significance for the way government and industry leaders stabilize future perspectives. Specialist organizations such as Cambridge Energy Research Associates (CERA) have taken center stage in global market forecasting. The growth of intermediaries is no doubt a response to deep uncertainties surrounding the future of supply and demand interactions but it is also an opportunity created by experts to enhance their own expansion and prestige (Brooks, 2002: 148).

The idea that the future has a significant role to play in the construction of the present is not new. Giddens writes that "under conditions of modernity, the future is continually drawn into the present by means of the reflexive organization of knowledge environments"; the discourse through which this occurs involves terminologies of risk (Giddens, 1991: 3). Beck characterizes late-modernity as a risk society, in which "we are caught up in defensive battles of various types, anticipating the

hostile substances in one's manner of living" (Beck, 1994: 45). Calculating risk in the oil and natural gas industries is also an open-ended, future-oriented project, the goal of which is to anticipate all loci of uncertainty while increasing the chance of economic success. This has been especially the case since the 1980s, when market restructuring adopted institutions from the financial industry so that prices could be based on competition rather than regulation.

But the industry's competitive structure has raised problems for an older market segment of energy producers and pipeline companies that seek to develop new sources of Arctic oil and gas supply. In the natural gas industry, government deregulation effectively renounced control over price and dismantled an environment in which financial instruments like long-term contracts could diminish the high-stakes, high-costs uncertainty of investing in large energy systems. As such, market risk is critically privatized.

In the case of Alaska gas development, it is extremely difficult to synchronize the long-term horizon of Arctic energy production with the short-term volatility of markets because of uncertain policies around climate legislation and shale gas production. Indeed, the choice of market itself, whether the Asia-Pacific region or North America, is in part determined by expectations of how these uncertainties will be resolved. The tackling of these uncertainties is generating interest among industry and government leaders in the strategic research products created by consultants that formulate perspectives that are fundamental for social coordination surrounding issues of risk, i.e., for purposes of influencing policymakers and public opinion.

The Growth Imperative: Discourse Framework

Scholars examining intermediary expertise have become sensitive to the role that both technologies and theories play in constituting market development. Callon, Çaliskan, and MacKenzie argue that economic theories and financial tools are performative; that is, they not only describe but help produce the settings to which they are applied (Callon, 2007; Çaliskan and Callon, 2009; MacKenzie, 2006a–b). Through their application, theories and related tools change how people think about markets and enact the framing processes that serve to allow their operation (Mallard, 2007). This is an important insight that is worth transferring from the study of economic transactions to understanding the workings of energy consultants within Arctic energy development. Energy analysts are an ideal site to build on the performativity thesis because the subject matter deals with forms of influence as complicated as financial theories. Whereas Hardie and MacKenzie (2007) show how financial research can modify a price, it can be argued that consultant assessments can change the trajectory of energy transportation systems.

Perhaps the best case study in this regard concerns attempts to develop Alaska natural gas by, specifically, market design, beginning in 2000 with a formalized image of a "growth imperative" (CERA, 2000; Federal Energy Regulatory Commission, 2000). Details of the growth imperative appear in "The Long Ascent," a market

report published in May 2000 by consultants for Cambridge Energy Research Associates (Robinson and Hoffman, 2000). "The Long Ascent" achieves significance in part by appearing within a sequence of studies. Months earlier, in January 2000, in association with the accounting firm Arthur Andersen, Cambridge Energy released "Natural Gas Trends" to a receptive audience of industry observers, as is visible in citations across the trade press. The *Oil and Gas Journal* (*OGJ*), for example, states, "[t]he North American natural gas sector will experience unprecedented growth over the coming decade [says] a joint study on North American natural gas trends by Arthur Andersen and Cambridge Energy Research Associates." The quote appears under the heading, "U.S. gas market to surge in coming decade" (*OGJ*, 2000).

Although details of "The Long Ascent" outlined data analyzed earlier that year, it presents itself also as a promissory note for pending research, as evidenced by an advertisement for future work within the report including "The Future of North American Gas Supply Study," 2001. Finally, "The Long Ascent" may be characterized as offering three discursive formations that can be attributed to similar types of reports produced from competing analysts during this period (Rasmussen, 2000). These three formations are: values, expectations, and limits.

Values of the Growth Imperative

Three values lie at the foundation of meaning in support of the growth imperative. First, the growth imperative is the product of a framework for evaluating investment decisions. Second, the growth imperative retains its own structuring principles through internal composition. Finally, the growth imperative places its entire coherence, both as a product of a framework and its internal composition, under a rubric best described as a dual-progressory.

As a product of a framework the growth imperative has a bounded quality. It represents the natural gas supply chain in North America as a continental system. Its technological status, therefore, is limited by its own self-enclosed (technical, economic, political, cultural self-sufficiency. The framework relies upon categories of data collection in which all qualities are translated into quantities that are measured against each other across incremental time periods. These quantities refer to a natural gas resource base and, in particular, activities that determine its production potential, including the possibility for increasing the availability of the resource and at what capacities and temporal rates, especially in those cases that relate to a response to expected demands from energy consumers. As a continentally self-enclosed system, the framework is partitioned or regionalized to create comparative values, as in comparative costs and economics of shipping, production, and so on. There is also a variety of categories that relate to external points of reference and projection, government regulation, economic growth, investments, and what might be referred to more generally as natural gas market fundamentals: demand, transportation, and pricing. Finally, there is constant attention to timing and sequencing of resource use.

To describe the growth imperative as expressing an internal composition refers to a series of internal logics that are imaginative. They include forms of causality

such as "rippling effects" that are best described as underlying forces whose contact points with the surface of things can be missed even by the most careful of observers. They include "dramatic force-pressures" that are all too obvious to go unnoticed by the most casual of industry watchers. They include forms of temporality that relate a variety of suddenlys and unexpectednesses that cannot be accounted for in terms of evolution, progress, or navigation, but instead call to mind threshold, crisis, and potential. These suddenlys typically take place alongside descriptions of energy events that are isolated, single, and unique, and that can be described without any connection to an encompassing industry whole.

This form of duration, volatility time, can be contrasted to continuous forms of temporality where what is described instead are price paradigms, price environments, supply trends, and so on. It is this latter type of marked typicality that reflects a sigh of relief for the industry. It is a departure from the strange, unusual, and rare. But it can also threaten to create "treadmills" and thus impair the growth imperative. In addition to causality and temporality, there are prerequisites for rationalization, that is, contradictions that require smoothing out, such as "twists and turns," "booms and busts," "accelerations and downturns."

Finally, the growth imperative resides under a rubric best described as a dual-progressory. A dual-progressory, on the one hand, is a narrative description intending to be fully grasped as an empirical-based probability (with some yet unknown degree of certitude). Therefore, it has historical trajectory. On the other hand, it permits denial of responsibility upon its failure because, in fact, it retains an abstraction of plausibility. As such, it represents itself merely as a theoretically correct formulation (growth will happen, it is only a matter of how and when).

The dual-progressory is similar to what Marshall Sahlins and Elman Service in *Evolution and Culture* (1960), referring to an earlier period of anthropological theorizing, call specific and general evolution. According to their view, evolution describes a trend among all living organisms to move in the direction toward the maximization of energy efficiency, to utilize the earth's resources by some ratio of energy captured and used relative to the organism's own expenditure in the process of taking it. Sahlins clarifies the description of this trend by suggesting that evolution moves simultaneously in two directions. On the one side, evolution creates diversity through adaptive modification where new forms differentiate from old. On the other side, evolution generates progress: higher forms arise from, and surpass, lower forms. The first of these directions he calls specific evolution, and the second, general evolution.

Expectations of the Growth Imperative

For analysts, the year 2000 marked the beginning of a new millennium for the natural gas industry. This sense of expectation suggests analysts had become conscious of the industry in relation to new beginnings, but also in such ways as to be transfixed on a very ambitious growth target—building toward a 30 trillion cubic feet (Tcf) market in the United States by 2010. Analysts describe the target as

driven by a surge of natural gas–fired electricity power generation, with underlying demand drivers in place to support a dramatic (35 percent) expansion in the gas market. They describe the path toward 30 Tcf as anything but smooth and perceive the industry as facing intensifying demand pressure from electric power markets at a moment when gas production in the United States is actually falling. Energy forecasters describe conflicting forces between new demands for natural gas fuel from increased electricity use and declining reserves that would require "rationalization," that is, coordinating the timing and sequencing of events for longer-term growth prospects.

Analysts compare their expectations of industry growth to present values. The market in 2000 was roughly 22 Tcf. Thus, they present the growth imperative as an item of significantly more annual growth (3.1 percent—significantly more than the 1.8 percent annual pace of growth during the 1990s). Moving forward therefore will require dramatic increases in investment in gas exploration and production as well as pipeline transmission infrastructure. The result of such investment will be a larger, more visible, and much changed industry compared to what existed in 2000.

Such pronouncements of growth were not new. What was telling, and what analysts seize upon in their descriptions, is how strongly they feel these pronouncements continue to resonate within the industry itself. But moving forward requires reconciling two conflicting forces. First, analysts argue that consumer demand pressure for electric power is intensifying. Second, the challenges for increasing gas supply are intensifying. Analysts describe in detail how electric power is the driver of growth. It is an anticipated power wave that had already begun. Natural gas use in electricity power generation rose during the 1990s, and the pace of growth was accelerating as 2000 began. In addition, natural gas continued to be the most cost-effective incremental generation technology that met increasingly stringent clean-air requirements. The combination of these forces had led to a surge in electricity power turbine orders and announcements of new gas-fired power plants. For energy analysts, the penetration of natural gas into the power sector had shifted from a widely discussed potential to a pervasive reality that would pressure the gas market—and gas supply—in the years ahead.

Limits of the Growth Imperative: Developing the New Frontier

What is clear from analyst descriptions is that during the first decade of the 2000s—whether the market actually grew to 30 Tcf or not—market forces were driving the industry. The growth imperative was likely to fundamentally alter the structure and functioning of the North American gas market. But reaching the goal would require connecting major new supply frontiers. Such a feat would require a price shock before the capital would be committed to bring such projects to completion. The interplay of the conflicting supply and demand forces was expected to accentuate a boom and bust cycle in the marketplace, making the road to 30 Tcf a "wild ride for the entire industry" (CERA, 2000: 3).

During this period, the supply frontiers included Alaska gas, Atlantic Canadian gas, and liquefied natural gas (LNG). These frontiers would be "economic" as understood in terms of falling below prices for natural gas in year 2000. These sources would also fall below the long-term future prices expected by major gas brokerages. The pattern demonstrated a shift in the underlying playing field for gas prices. That is, the price of natural gas had trended upward over the past decade. The institutionalization of this shift—coupled with the challenge of increasing production in traditional supply basins—would push industry into new supply frontiers.

Yet surmounting the economic threshold would only be the first step in tapping into Arctic frontiers. In most cases, these projects would require long-term capital commitments to develop the necessary infrastructure to connect them to the North American marketplace. Political challenges and competitive threats to existing supply regions and flows would follow. Through it all, investors would require confidence that once the capital commitment was made and these frontier projects were developed, they would become the low-cost suppliers to the North American marketplace.

Throughout the 1980s and 1990s, developing natural gas from Arctic Alaska and Canada was economically prohibitive. But its potential development emerged at the beginning of the new millennium. These projects would require large investments in infrastructure and in several cases would threaten to displace existing supplies into high value markets. Unlike existing supply sources, several of these frontier projects would require minimum scales (1.0 Bcf per day or more)—adding to the potential dislocating effects on the market as they come online. This concern with natural gas from Alaska linked the timing and sequencing of these supplies to regulation and politics.

Events

Across the United States, the winter of 2000 to 2001 was a period of natural gas market shock. A decline in productive capacity and low storage drove North American energy prices to record levels. By the end of January, natural gas prices were four times more than one year previously. State politicians and members of Congress reacted swiftly by publicizing concern for energy consumers while accusing energy traders and gas producers of price gouging. Some state leaders in Alaska found themselves stirring up public awareness over the winter gas shortfall, declaring the nation's energy crisis as a "window of opportunity" for commercializing Prudhoe Bay gas.

During this period, energy analysts arrived in Alaska with the idea that a large volume of Arctic natural gas had suddenly become valuable. Natural gas located under the earth's crust at Prudhoe Bay represents a vast amount indeed. But its extraordinary positioning far outside the continental energy market is a feature of extreme importance. The subsequent domestication of the growth imperative, with its hierarchy of meanings and sequence of events, in Alaska state and news media discourses suggests that the self-enclosed priorities of state officials were penetrated

in a short time by their newly formed understandings of the US natural gas energy market. Working alongside consultants, state officials developed a new set of distinctions to critically reflect back onto the political event of the pipeline project. In the process of identifying multiple distinctions, a new recoding of the pipeline took place, transforming it from a political event into an economic event.