

Introduction: How a Public Utility Became a “Predatory Formation”

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This multidisciplinary collection presents a picture of the soon-to-be-completed Muskrat Falls hydroelectric project as a menacing creation made from well-entrenched forms of settler-colonial resource extraction and new kinds of debt-fuelled and privatized public infrastructure. Some of the authors included here examine the highly particular and local crises that the hydroelectric dam has created in public access to food, drinking water, and affordable energy. Others address the global financial and political forces that have brought the project to life and which it shares with many other equally threatening infrastructure megaprojects at work around the world now. For this reason, we believe that this book will be of interest not only to local readers directly affected by the dam but also to the many people from India to Belize and other places where lives have become entangled in projects that work as investment vehicles for financiers, at the same time that they undermine reliable local access to basic vital needs of clean water, fresh air, and affordable energy.

Like many other troubled energy megaprojects in development now around the world, the Muskrat Falls hydroelectric dam seems to defy all economic sense. A \$13 billion public investment in hydro power, in a province of half a million people, will make energy much more expensive and thus, for many people, much less secure. A far more serious problem is that the dam itself on the Churchill River in Labrador, 1,000 miles away from the homes it will heat on the island of Newfoundland, has created

a long-term threat of methylmercury poisoning, catastrophic flooding, and what Mi'kmaq lawyer and professor Pamela Palmater has called “a modern-day form of genocide” for Indigenous communities living in a sacrifice zone downstream from the dam (Rollmann 2016).

In her contribution to this volume, Shiri Pasternak, of X University in Toronto, places the Muskrat Falls project in the context of a long-standing Canadian practice of hydraulic imperialism, “the process of marginalizing the First Nations [and Métis and Inuit] peoples through the manipulation of hydrological and hydraulic resources” (40) to serve capital expansion through dams, rail lines, waterways, and pipelines that directly interfere in Indigenous lives.

The Muskrat Falls project is built on a long and troubled history of settler-colonial politics that have tied the lives and resources of people in Labrador to the social and economic well-being of the nearby island of Newfoundland. Muskrat Falls is on the Churchill River, about 30 kilometres southwest of the town of Happy Valley-Goose Bay, near the Lake Melville estuary in Labrador, Canada. Labrador, which forms part of the northeastern mainland of North America, came under the legal jurisdiction of the nearby island of Newfoundland in 1927. At that time, Newfoundland was a separate dominion within the British empire. When Newfoundland joined Canada in 1949, it became the Canadian province of Newfoundland and Labrador. Since then, as Neria Aylward explains in her essay, the water and mineral resources of Labrador’s interior have often been placed in the service of the modernization and development of the island of Newfoundland.

Contributors to this book are, of course, not the only critics of the project. The recently completed report of the \$16 million Muskrat Falls Inquiry describes the dam as a “misguided project” and confirms that its completion and operation present a significant long-term threat to the province’s financial and energy security (LeBlanc 2020).

Under oath, expert witnesses at the Inquiry explained how the “p-factors” through which planners measure risk in “megaprojects” like this were manipulated, how markets were overestimated, local demand understudied, and more generally how the official government sanctioning of the infrastructure project was made possible by a pattern of “concealing information about the project’s costs, schedule and risks” (LeBlanc 2020, 3).

More remarkable than all the damning evidence presented at the Inquiry, though, is the simple fact that the dam now continues on toward completion, even though it is widely expected to fail as a commercial undertaking, to double domestic electrical costs and, as Ryan Calder and co-authors demonstrate in their contribution here, is known to pose a threat of methylmercury contamination for communities downstream. The dam continues to be built as planned and accommodations continue to be made to force its economic illogic to life. A completion agreement accompanying the financing requires the province to cover any unexpected costs that arise in bringing the dam into operation and extracting from the public infrastructure a guaranteed rate of return for private investors, even in the face of the direct threat it is now known to pose to energy security and public utility (Government of Newfoundland and Labrador 2012).

Since March 2020, delays related to the COVID-19 crisis have added an additional \$1 million a day in financing costs, which will further increase domestic electrical prices (Roberts 2020). Long before the pandemic shutdown, though, the provincial government had already publicly acknowledged the threat the dam poses to citizens' future energy security and began pursuing ways of protecting them from the economic impact of its new hydro project (Bundale 2019; Fitzpatrick 2019; Government of Newfoundland and Labrador 2019). The province is investigating a rate-mitigation plan that will make use of more public funds to subsidize consumer electricity and protect citizens from "rate-shock" when the new system comes online, and electrical prices double, as expected.

The problem of rate mitigation, as it has become known, captures the counterintuitive economics of Muskrat Falls: How can it be that, after having spent almost \$13 billion on energy security, the provincial government must now seek revenue from another source, or assistance from the federal government to subsidize electrical rates and protect citizens from the Frankenstein-like creation of its own Crown agency?

Considered on their own, the many distinct problems that have beleaguered the dam might each be attributed to local accidents of mismanagement, cost overrun, "optimism bias," or even corruption and crime. But taken together, the logistics and means which brought Muskrat Falls to life fit the profile of an increasingly familiar kind of

crisis, visible across Canada and around the world today, where public means of providing vital services and infrastructural security—that is, access to heat, water, food, energy, shelter—are changed into collateral for risky, speculative enterprises, with often disastrous results. The Chalillo Dam built in Belize by Newfoundland’s Fortis Inc., The Irish Water Corporation, the airport in Freetown Sierra Leone, the Site C Dam in British Columbia, and the Hambantota port in Sri Lanka are all recent projects that, like Muskrat Falls, promised to reinvigorate failing public infrastructure through new forms of investment finance. Instead, each has arguably diminished the public utility of these utilities because, as with Muskrat Falls, the mechanisms and means that guarantee profit for global investment houses and international construction firms directly undermine long-term public health and the infrastructural security of citizens.¹

Take or Pay: The New Political Economy of Extraction

The financial mechanisms at work in Muskrat Falls, which make a secure investment out of a threatening public infrastructure, have their origins in a new wave of “extractive capital” (Mezzadra and Neilson 2014, 2019) through which investors now mine profits around the world. The term does not refer to extractive industries, like the fossil fuel industry. It describes the way investment capital increasingly accumulates wealth not by efficiently organizing industries and selling commodities but through sophisticated “operations” and “logistics” that extract wealth from activities that investors themselves do not operate or organize, but whose value they are able to “mine” through legal and logistical measures.

Finance, insurance, and rent are examples of extraction in this sense, but so is wealth made from privatizing public utilities and securitizing state-regulated revenue, which, as I explain in my contribution here, are the most important tools in the Muskrat Falls project. Investors find value in projects like this not because of the good sense of the actual industrial enterprise being created but because of the strength of the legal and “extractive” claims they can place on the revenue moving through them.

The economic illogic of Muskrat Falls makes more sense when placed in the context of this larger global shift in the mechanisms of capital accumulation. Nicholas Hildyard (2016) examines several remarkable

recent examples of extractive megaprojects designed to accumulate private profit by accessing state-controlled revenue streams tied to infrastructure, and through binding contracts that prevent local governments and citizens from pursuing other, more affordable, means of satisfying their infrastructural needs.

In California, for example, a contract for a privately financed toll road prevented the state government from maintaining and repairing parallel public non-tolled roads that would be in competition with it.

A hospital in Lesotho, hailed by the World Bank as a model of private-public partnerships, resulted in an institution three times more expensive to operate for one of the poorest countries in the world. When the government considered building another that might provide more affordable care for its citizens, it found that the contract with Netcare required that it compensate the company for any threats to its profits that a new, cheaper hospital might present. The people of Lesotho were required, as the people of Newfoundland and Labrador now will be, to operate a public institution that undermines public security through the same means that guarantee a stable rate of return for private investors.

The take-or-pay clause in the Power Purchase Agreement (PPA) governing Muskrat Falls' financing is built on a similar set of financial and political devices designed to mine private wealth from public revenue.

In its function as a public utility, Newfoundland Hydro (NL Hydro) is required by the provincial Public Utilities Board (PUB) to secure the most reliable and cost-effective source of energy for the citizens of the province. In the take-or-pay arrangement, however, this mandate to secure affordable public energy is compromised by a new contractual obligation which requires that, for the next fifty years, NL Hydro must buy from its new and unregulated sibling Muskrat Falls Corporation (MFC) a block of power for domestic use that is worth an amount equal to all of the revenue required to finance, construct, and operate the Muskrat Falls dam and related infrastructure. The amount NL Hydro collects from domestic customers must cover all costs of generation and transmission, including the cost of creating and transmitting any power sold on external markets (Nalcor 2013). Since Muskrat Falls is three to four times larger than what is needed for domestic supply, these operational costs will make the end cost of domestic energy double.

In order to meet its new contractual obligation, NL Hydro must now renege on its obligation to purchase and provide the cheapest electricity possible for domestic customers. Through this contractual rearrangement, the price of domestic electricity will now be raised to whatever is necessary to provide investors an 8.4 per cent rate of return on investment for the life of the project (Nalcor 2013; Vardy 2017). To meet this new take-or-pay obligation to MFC, NL Hydro must either double the price paid by consumers or find some other source of revenue to mitigate the cost to consumers of the inaccessibly priced domestic electricity they must now buy from their own Crown agency (Government of Newfoundland and Labrador 2019).

In the Inquiry we learned that the take-or-pay clause was required to elevate the project to a AAA-grade-level investment (LeBlanc 2020, 9). This clause is a mechanism that will allow investors to drain profit from the operation of the dam, while being protected from the risks of fluctuating or nonexistent markets for the power the dam produces. The deceptively simple mechanism of the take-or-pay agreement has allowed the project to develop as an “investment without economics,” as the title of James Feehan’s essay suggests. As an extractive device, it works by reversing the engines, we might say, of NL Hydro’s monopoly power. Instead of protecting consumers’ access to electricity from future market volatility, the state monopoly now protects investors from market forces by forcing domestic customers to purchase power at greater than market cost.

A similar kind of clause is found in the “Master Agreement” overseeing the financial contract between the state of Belize and the Newfoundland-based energy multinational Fortis Inc.² Stan Marshall, then CEO of the private company Fortis, who has overseen construction of both the Muskrat Falls and Chalillo Dams, assured the people of Belize that Fortis would not be involved if it was not a good deal. What is good for Fortis, though, is clearly not good for Belize. What made Chalillo a good deal was not a reliable market for affordable domestic energy, but a take-or-pay agreement that guarantees Fortis a constant return on investment, no matter what the effect on local finances. If the Chalillo Dam cannot turn a profit on its own, the Belizean government must pay Fortis.

Megaprojects like Muskrat Falls are often difficult for the public funding them to comprehend not only because of their immense size and

complexity or the underhanded corruption and crime that sometimes accompanies them. They defy all economic sense, because our common ideas of economics have been built on notions of wealth originating in the organization of labour for the production and sale of commodities, and following the reason of labour markets, supply and demand, or production and consumption. Since the 1990s, however, more wealth has been made through various “extractive” forms of rent and interest on capital than through the production and sale of commodities.³

The recent success of financial elites in achieving their extreme concentrations of wealth has been due in no small part to their ability to insulate themselves from the risks and perils of enterprises in the local “real economies” which they mine. Saskia Sassen describes a new “roving capacity for liquefying and capturing what there is to be captured with a minimalism of sorts. This is not the old imperial mode: no interest in controlling vast territories, just extracting what is needed” (2015, xv).

Global investors, however, have not accumulated this wealth on their own. Extractive capital relies on the precision of local “logistics and operations” (Mezzadra and Neilson 2019) that arrange measures such as take-or-pay agreements to disembed revenue from its local contexts and free it up for speculative investment. The important means of production for this wealth are not industrial factories but what Sassen (2014, 2017) calls the “predatory formations” of legal and technocratic arrangements that connect anonymous flows of investment capital to the local sources of value they exploit. Hyper profits of the last few decades have been made through the legal work of, for instance, undoing consumer protections, contracting debt, managing environmental assessments, and opening up state-protected revenues. This shift in political economy toward extractive forms of accumulation is producing a corresponding insecurity in public and collective life all around the world now. The social welfare state is being replaced by the “competitive” market-oriented state, which sheds many of its obligations to secure basic infrastructure and living conditions for all of its population, in order to be more “competitive” and better satisfy the conditions, contracts, and schedules of finance.

We are seeing the dismantling of many protections from market forces built up over the years of the Keynesian welfare state, such as the repurposing of NL Hydro to serve private ends. Deregulation,

decommissioning of public oversight bodies, privatization of state services, financialization of state revenues, and austerity measures that limit social welfare entitlement and improve bond ratings have all helped produce the gross inequality in wealth that has characterized the past several decades.

As we are learning through the crises of Muskrat Falls, in the economics of the competitive state, the GDP can grow, and economic indices improve at the same time that more people are excluded from long-term economic opportunity, secure living conditions, and protection from harm.

From High Modernist to Neo-Liberal Dams

The transformation of our energy supply into a "predatory formation" is a new chapter in a very old story of hydroelectric dams and failed developments schemes. Through the twentieth century, the hydroelectric dam has symbolized modernity and progress. Dams promised a synthesis of finance, engineering, and natural force that was a central pillar of state-sponsored modernization projects. For James C. Scott (1999, 2006), the hydroelectric dam is a paragon of "high modernist" twentieth-century state planning. The Hoover Dam, of course, is an emblem of the American New Deal and the birth of the Keynesian social welfare state. In the post-colonial developing world, the massive dam became a central ideological and nationalist symbol of energy sovereignty and modernization. Nehru praised the hydro dam as the temple of Modern India.

In the Canadian context, David MacFarlane, Peter Kitay, and Andrew Watson have examined the role of hydro power in the development of Canadian political economy and forms of national identity (MacFarlane and Kitay 2016; MacFarlane and Watson 2018). The spatial distribution of hydro production and consumption played a significant role in the creation of the metropolitan-rural and settler-Indigenous divisions that continue to define life in Canada today.

In Newfoundland and Labrador, the hydroelectric potential of Muskrat Falls on the Lower Churchill River has a very particular history as a highly charged signifier of national redemption. For decades now, it has been imagined that its potential might redeem our earlier failed hydro ventures in the 1950s and 1960s with the Churchill Falls dam, on the

Upper Churchill River. At the time of its completion in 1967, Churchill Falls was the largest hydro-generating plant in the world. The generating station itself, which produces 5428 megawatts (MW) of power was a feat of engineering and planning that was built on time and under budget. While it continues to realize some revenue for the province, Churchill Falls is now widely regarded as a failed business venture because the means of bringing its power to market ultimately meant that the province gained little from the project and lost the lion's share of its revenue to the province of Quebec, which gained the rights to transmit power crossing its territory and to re-sell it to others at a profit. Churchill Falls was our first encounter with the dashed hope of salvation through big hydro. Since then, the hydro potential lower down the Churchill River, which includes both Muskrat Falls (824 MW) and the Gull Island reservoir area (2250 MW), has often been imagined as a way of righting the wrong done to us by the humiliating loss of the Upper Churchill Falls Dam, and of reigniting the promise of big hydro (Bannister 2012; Feehan 2011; Smith 1975).

History repeats itself, Marx famously said: first as tragedy, then as farce. One of the most farcical dimensions of this, the province's second massive hydro-dam project, is that the risky economics and possible future bankruptcy of the Muskrat Falls project could well mean that Newfoundland and Labrador's remaining 34 per cent share of the Upper Churchill Falls Dam ends up fully lost to outside forces, quite likely Quebec, in order to satisfy creditors of the new project (Vardy 2017).

Even a brief comparison of Muskrat Falls and Churchill Falls shows us how visions of "nationalism" and "energy sovereignty" that often accompany megaprojects like this are "empty signifiers" that can be mobilized for many different purposes and ideas of what a nation and its resources signify. In the early 1950s, when Newfoundland's first premier, Joey Smallwood, courted the Rothschild's capital to develop resources in Labrador, he envisioned an older imperial idea of harnessing state power and private capital to develop the wild terra nullius of the Ungava Peninsula. Smallwood likened the financial arrangement he had in mind to the East India Company: a very early colonial arrangement, in which the state grants a licence for the operation of a private enterprise, from which it extracts a form of "rent." Winston Churchill called it a

“grand imperial project” and Smallwood saw himself as a kind of imperial statesman as he negotiated with Edmund de Rothschild at the very desk at which Napoleon had financed the battle of Waterloo (Biggs 1970). Eventually Brinco, the private consortium funded by de Rothschild, was nationalized by Smallwood in a high Keynesian reclaiming of public infrastructure.

Dirty Oil into Clean Hydro

Muskat Falls came to life in the very different context of the early 2000s. The anti-federalist provincial “nationalism” of Danny Williams’s conservative government, which came to power in 2003, was not driven by imperial fantasies of conquering terra nullius, or Keynesian principles of nationalizing and de-commodifying energy. Instead, it promoted new “neo-liberal” ideas of supply side economics, the state as a business and the citizen as entrepreneur and savvy investor, with assets best used as investment and debt leverage for speculative projects. In this new vision of Newfoundland and Labrador, what the state has on offer to capital is not only its natural resources, as Smallwood offered the Rothschilds, but also stable predictable revenues under the regulatory powers of the state. The machinery that extracts wealth from this source is not earth-moving equipment or turbines, but the state’s power to remove consumer protections in order to free up domestic revenue for speculative investment capital.

The “New Energy” campaign, launched in 2007, aimed to renovate the domestic electrical grid with revenue from the province’s offshore oil platforms. The idea was to turn money from dirty fossil fuels into a green hydro-powered future (Government of Newfoundland and Labrador 2007). The most pressing energy security problem at the time was the need to replace an aging backup generation plant which serviced the Avalon Peninsula, the most population dense part of the province, which consumes 20 per cent of domestic electrical supply. The Holyrood generator burns bunker C crude oil, one of the dirtiest methods of creating electricity. It now seems clear that many other smaller solutions might have been more appropriate than the megaproject that eventually replaced it (LeBlanc 2020; Vardy 2017; Wangersky 2018).

Planners inside Nalcor, the Crown energy corporation overseeing the project, pushed hard for construction of a dam on the Churchill River, 1,000 miles from the Avalon Peninsula, the area of greatest demand. A plan to produce 824 MW of power, or 4.9 terawatt (TW) hours of energy yearly, three times more than the province would likely need to meet its domestic future energy requirements, and 1,200 kilometres of transmission cables was justified by what many now describe as a poorly researched arrangement to sell excess energy over a subsea cable known as the “Maritime Link” (ML) to Nova Scotia, and then further to American markets which have yet to materialize. Long-term revenue from external sales would supposedly cover the short-term mega-cost for construction of an oversized dam. In this way, it promised a unity of financial and clean-energy security in which a finite sum of wealth from dirty oil would create an endless future of clean hydro power. The subsea ML between Nova Scotia and the island of Newfoundland was built and paid for by a private energy consortium, Emera, in exchange for 20 per cent of Muskrat power for a 35-year period (Nalcor 2019; Vardy 2017).

From the start, it was never clear how the business plan of selling excess power over the ML on the American Eastern Seaboard would ever be a reliable revenue source. Since the late 2000s, when the project was first proposed, declining oil prices, increasingly cheaper alternative energy sources, the spread of fracking, and the new American political reality of a deregulated energy sector have all made it cheaper for Americans to buy electricity closer to home.

Expert testimony at the Muskrat Falls public inquiry showed that the Williams government’s New Energy strategy distinguished itself through the lack of serious attention paid to questions of local energy demand and access. The Muskrat Falls plan differed from previous energy projects in the way that it gambled with the existing domestic energy revenues of citizens to finance a much larger commercial energy export enterprise, on whose fortunes domestic energy was now made to depend. As a result, the future of domestic access to energy security was made dependent on the fortunes of external markets, or the absence of them, as it turns out. Prospects for the commercial viability of the Muskrat Falls enterprise are dim. When Stan Marshall took over the project in 2016, he said: “It was a gamble ... [and] it has gone against us.” He continued: “The project was

too big for our needs ... we speculated, and we lost” (Roberts 2016).

Because of the “financialized” design of the project though, even if the enterprise fails as a commercial project and threatens citizens’ access to affordable electricity, it will fail into an environment in which it will continue to thrive as a private investment.

Changes required by extractive projects like this are not only economic but also require sociological and environmental changes to make them work. As the state is more solidly restructured to service finance capital, those who cannot thrive in the new competitive environment and absorb, in our case, the rate-shock of energy price increase, or forced reliance on market-based food security, matter increasingly little in the metrics that inform public policy and the financial and social organization that will exclude them from it.

Sassen (2014) points out that while we have come to understand how the outsourcing of manufacturing has been linked to sweatshop labour and degraded human rights, the same is not true of investment capital. It remains shrouded in the mysteries of its algorithms and calculations that appear to make money out of money by forecasting and managing risk factors.

To understand the engine of inequality today, we need a better sociology of the “predatory formations,” as Sassen (2015, 2017) calls them, that take shape around a development like a public hydro dam and extract the public value from it, giving it over to private hands. The public to private transfer of wealth in projects like Muskrat Falls does not happen without the numerous agencies that prepare the terrain for this extraction by externalizing risk, stabilizing revenue, and anticipating and countering whatever local forces impede completion agreements and reliable rates of return.

To understand how wealth gets made in a project like this, we need to follow it out of the boardroom and out of abstract technocratic planning formulae and into the scenes of actual social and environmental dislocations that have made the reliability of construction schedules and completion agreements possible.

We hope that the different kinds of analyses and reflections gathered in this book will help the reader better understand the variety of means and mechanisms that connect the successful investment apparatus of Muskrat Falls to the different forms of environmental and social problems

on which it has been built. Since Muskrat Falls resembles many other similar developments, we expect that the insights gathered together here about the specific localized effects of this dam will be useful for understanding the more general techniques and factors it shares in common with other “predatory formations” at work around the world now.

Many of the contributions included here grew out of a symposium held at Memorial University in fall 2018. It brought together scholars, activists, artists, and others to examine the many social and environmental costs of the dam. Since then, these works have evolved and changed in light of the new information that continues to be released about the machinations of the project. Most of these essays were written during the period of the Inquiry, but before the release of its final report.

Many of the authors represented here—David Vardy, James Feehan, Stig Bernander, and Ryan Calder, to name a few—have been instrumental in bringing the dam’s problems to light and in pushing for an inquiry into its problems.

As a whole, the essays and other works included here show that the energy project would, arguably, not have gone ahead without the many strategic background operations and measures that have threatened environmental and social security in the province. These include the weakening of public regulatory bodies, failure to act on environmental recommendations, refusal to use new scientific methods and data, suppression of protest movements, suppression of journalism, arrest and prosecution of Indigenous protestors, and the authority given to Nalcor, the semi-privatized Crown corporation overseeing the project, to manage the many emerging social and environmental crises generated by the project.

On its own, any one of the crises examined here might appear to be the result of specific and unforeseen misunderstandings and misinformation. Taken together, though, they display a systemic force that has turned the public energy supply into an investment apparatus that has developed in a threatening, parasitic relation to the province’s economy, polity, and environment.

Muskrat Falls has been especially difficult to understand because from the start it took shape in a technocratic culture, outside the realm of public debate, and apart from the oversight of public regulatory agencies. At an early stage of the project, reviewers at the provincial PUB asked for

more information to decide whether the large dam was the best option for satisfying public energy needs. At that point, the project was removed from the jurisdiction of the regulatory body. This initial separation from regulatory oversight meant that, from then on, the project received little critical examination from agencies representing the public interest.

Economists David Vardy and James Feehan explain in their essays that, in its early stages, planners paid little attention to economic questions of best cost options to satisfy local energy demand. Vardy was PUB chair when the project was removed from the regulatory agency. In his essay here, Vardy shows that the mathematical finance that suggested the oversized dam could produce a source of profit for the province was never a realizable goal, and likely never will be. The dam could proceed without the reason of supply and demand because, once it was removed from the oversight of the PUB, its planners did not have to respond to queries for more and better information to justify its commercial and logistic design. The dam did not have to make sense to investors, because the security of the revenue that paid them did not depend on markets but rather on the power of government monopoly.

Feehan, an expert in utility economics, was asked at an early stage to provide an opinion on the project. He explains his critique of the lack of research on domestic energy supply and pricing, and the absence of basic principles of utility economics in the initial planning. The dam proceeded as an “investment without economics” only by ignoring or silencing critics like Feehan and Vardy.

Muskrat Falls from the Top Down and the Bottom Up

In its early phase of development from 2012 to 2016, no major news source, with the exception of Aboriginal People’s Television News (APTN), carried out any sustained investigative journalism on the project. This meant that many of the important questions and criticisms of it went unexamined and were unable to take root in the public sphere. Muskrat Falls also developed during the rise of social media in the early 2010s. Early criticism and debate about its economics and logistics developed through the work of citizen journalists, Twitter, the blogosphere, independent media such as the independent.ca, and through information

leaking and whistleblowing on blog posts such as UncleGnarley.com. Des Sullivan, a.k.a. Uncle Gnarley, explains in his contribution how the UncleGnarley.com site evolved as a means of disseminating information and calling for a public inquiry into the project's emerging problems. Sullivan's blog was a main forum for detailed, critical expert analysis of the fine points of the dam's financial and technical planning.

The dam's effects on the adjacent area in Labrador entered public consciousness through media-rich Indigenous protests on the ground in Labrador, where Muskrat Falls was being turned into a construction site. From 2016 onward, as more details about the project became publicly known, opposition to it grew and dominated news headlines and public debate. Resistance to the social, economic, and environmental impact of the project found expression in some of the most powerful and visible forms of protest and social critique the province has ever seen, uniting Labrador and the island portion of the province in new and important ways.⁴

The report of the Commission of Inquiry Respecting the Muskrat Falls Project (LeBlanc 2020), which grew out of the persistence of whistleblowers and "bottom-up" protests and investigations, provides an excellent history of the legal, legislative, and financial origins of the project. The Inquiry, however, arguably narrowed the terms of public debate by focusing on the "top-down" power players, covering almost exclusively economic and technical questions related to cost overruns and by filtering discussions through the legal, contractual discourse of lawyers representing and protecting their clients. The terms of reference of the Inquiry do not include, for example, the threat of methylmercury poisoning, landslides, or suppression of regulatory agencies and the press.

To get a realistic picture of how the project's misguided calculations and p-factors hit the ground and disrupted life here, though, it helps to recall some of the history of the project from the bottom up, that is, in light of the many kinds of problems it has created in the social and ecological worlds that have been rearranged to make the financial mining of the province's public energy system possible.

In Labrador, opposition to the dam began well before its construction got under way. What was in question for this oppositional force was not the terms of the various contracts, nor the percentages of financial risk (p-factors), but the more basic premise of the project, which was that the

Churchill River at Muskrat Falls could be turned into a hydroelectric machine, even if that meant threatening the health and livelihood of the Indigenous people who made their home there.

From the beginning, Indigenous groups living adjacent to the dam in Labrador resisted the project and the direct threat it poses to their health and way of life. In September 2012, NunatuKavut members (or Southern Inuit) began to protest at the Muskrat Falls site, when it was apparent that land was being cleared for construction of the dam before it had officially been sanctioned by the government.

In 2012, APTN carried a story about Dennis Burden, an area resident who, in an act of protest, took an axe to hydro poles in the area to cut power to the new construction site. Labrador Land Protectors continued to walk to the Falls as the project began, in spite of prohibitions against this. They voiced strong opposition to the physical impact to the land, footpaths, and cultural artifacts. They opposed the destruction of the riverine environment, and above all the threat of methylmercury contamination that could result from flooding for the dam reservoir. They were joined by groups like the GrandRiver Keeper and the Sierra Club, who legally challenged the weak environmental review on which the project was sanctioned.

An Indigenous-led protest movement of Land and Water Protectors, whose ancestral home included the area around the dam in Labrador, found support in a loose coalition of people across the province concerned about the fiscal mismanagement of the project’s escalating costs, its threats to domestic energy security, and the future of alternative energy.

In October 2016, the #MakeMuskratRight movement succeeded in temporarily halting the planned flooding of a reservoir for the dam. This followed a surge of protests that intensified and spread across the province and Canada, following the publication, in June 2016, of new evidence by scientists which showed that the flooding of the dam’s reservoir threatened to poison the food chain of Indigenous and settler communities downstream from the project with dangerously high levels of methylmercury. A team of researchers working out of Professor Elsie Sunderland’s laboratory at Harvard University drew on new insights about mercury methylation made available by conditions of climate change in the North. As Ryan Calder and the other researchers involved show in their essay, their investigations provided evidence that Lake

Melville, a large estuary downstream from the dam, which was excluded from Nalcor's initial environmental assessment, would not be a sink that absorbed mercury, as Nalcor has suggested, but an engine that produced dangerously high levels of methylmercury. This neurotoxin results from the flooding of carbon-rich soil and bioaccumulates over time in the flesh of fish and animals. The new research suggested that the threat of methylmercury contamination was far more dangerous in intensity, duration, and geographic reach than first reported in the environmental assessments supporting the initial sanctioning of Muskrat Falls and would threaten the "country food" of downstream communities for decades (Calder et al. 2016, #makemuskratright.com).

In 2014, Cabot Martin's book *Muskrat Madness* provided detailed criticisms of geophysical problems in the dam's construction and the threat of dam breach and catastrophic flooding that could result from it. In 2013, Martin and Grandriver Keeper Inc. had invited Stig Bernander, a Swedish geotechnical engineer, to examine the science behind the project. Since then, Bernander and his colleague Lennart Elfgren have written a number of reports questioning the data and methods used to assess the stability of the North Spur, a geological formation that forms one supporting arm of the dam. As they explain in their contribution, in 2017 Nalcor considered their concerns about the North Spur to be serious enough to warrant a peer review report of the research on which the dam had been planned. An analysis of Nalcor's peer review, however, shows that it did not provide any new science or data and instead reexamined and defended the original research that Bernander and Elfgren had questioned. The finding of the review panel is that the original research followed existing protocols for assessment and measurement and its conclusions about the dam must therefore be valid:

The report is based on information made available to the Geotechnical Peer Review Panel (GPRP) by SNC-Lavalin Inc. (SLI) and the Client. The GPRP has not performed any calculation to verify the accuracy, completeness or validity of the results obtained by SLI. The opinion of the GPRP is solely based on a review of available data and on the concept and methods used by SLI and the client

to assess stability issues at the North Spur. Therefore, the GPRP makes no representation regarding its accuracy and hereby disclaim any liability in connection therewith. (Hawlander et al. 2018)

In their contribution, Bernander and Elfgren explain that new research, using new methodologies, has shed new light on the stability of the dam. These innovations in research methods are needed to adequately assess the geophysical safety of the dam. They provide an overview of the scientific reasons for their concerns about the safety of the North Spur and explain their long, still continuing battle to get Nalcor to carry out the new scientific research necessary to understand the threat posed by the dam.

In both these cases, of the threat of flooding and of methylmercury contamination, we see the same systemic problem in the autonomy given to Nalcor to oversee the project outside the regulations of the PUB. Nalcor’s autonomy meant that it was ultimately up to the semi-privatized corporation to decide on the significance of the risks described by new science. In each instance, Nalcor defended the use of old science to address new problems brought to its attention and generally favoured the expeditious completion of the dam over more research and mitigation.

The Harvard research report on methylmercury was released in June 2016, four months before flooding was to begin. With this new evidence, the Nunatsiavut Government in Labrador launched its highly effective #MakeMuskratRight campaign. It disseminated the new, more comprehensive research in both technical and lay formats. It called for a greater role for local Indigenous government in monitoring and regulating the river. It reminded the public of the approaching deadline for reservoir flooding and the irreversible effects of methylmercury contamination. It called on the provincial government to instruct Nalcor to halt plans for flooding, to remove soil from the reservoir, and to mitigate methylmercury production and it asked the federal government to do its part to enforce the recommendations of its own Joint Federal-Provincial Review Panel, which had already recommended similar mitigation measures (#makemuskratright.com).

The hashtag #MakeMuskratRight was formed by the Nunatsiavut Government, but the movement spread out to represent a diverse bloc

of resistance, including NunatuKavut Community Council (NCC) or Southern Labrador Inuit (who have an unsettled land claim in the area), the Innu nation, settlers, Land Protectors, nursing mothers, hunger strikers, the Sierra Club, university professors, students, unions, and others who joined in the #MakeMuskratRight refusal to be a part of a polity that legally organized the poisoning of the few to reduce electrical bills for the many. The Indigenous-led protest was also powerfully able to unify and focus a diverse array of concerns about the project's destructive effect on the province's finances, on the development of alternative energy, and the undemocratic way in which the project was removed from public oversight bodies. All of these concerns were linked to the growing moral outrage at the plan to proceed with construction, without undertaking new measures to prevent contamination. Methylmercury became a unifying metaphor for everything wrong with the Muskrat Falls project (Parsons 2017).

Nalcor and the provincial government talked down the significance of the Harvard report on methylmercury. They considered removing some of the vegetation from the reservoir and promised to increase monitoring in the Lake Melville area. Its CEO explained that the project's completion agreement imposed a tightly organized schedule which required flooding to begin before freeze-up in the fall, which would be any time after the middle of October (2016). And, though it was already \$6 billion over budget, it could not afford the additional \$0.5 to \$1 billion to clear the soil.

Premier Dwight Ball invited the Nunatsiavut Government to "get to a table" and discuss the matter "government to government," but it insisted that there was nothing to discuss, only something to do—clear the reservoir.

Throughout the fall of 2016, protests of solidarity were held across the province and in Ottawa and Edmonton. Numerous small acts of resistance made clear a growing wave of resistance building across the social spectrum. The manager of the Labrador city of Cartwright refused to allow large turbines and industrial equipment heading to the dam to be unloaded at the town's dock. Unions in the province announced their support. #MakeMuskratRight posters appeared in windows around St. John's and on buttons on people's clothes. A security guard inside Nalcor's office in St. John's publicly quit as an act of solidarity with protestors, whom he had heard ridiculed in the office. The Indigenous activist and

law professor Pam Palmater described the impending flooding as an act of planned cultural genocide (Rollmann 2016).

Images broadcast from Labrador of Land Protectors at the construction site marching, walking, drumming, dancing, and refusing in various ways exclusion from a place that has been occupied by their people for at least three thousand years, made it impossible to regard the river as a hydroelectric machine or investment opportunity. The vitality and life in the images from Labrador showed that what Nalcor had presented as a construction site and source of profit for investors was a home to people who lived there.

In Labrador, a way of life and means of flourishing, supposedly protected under the Canadian constitution and the United Nations Declaration on the Rights of Indigenous Persons, were being destroyed for a false promise of cheaper energy rates for consumers on the island of Newfoundland (Rollmann 2017).

When Inuk artist Billy Gauthier began his hunger strike in mid-October 2016, he explained to CBC News:

See, this here land is the land that built me. Without this land, without Lake Melville, my family couldn't have survived in this area and many, many, many, many families before that couldn't survive in the area.

I'm an artist, I'm a stone sculptor, and all of my ideas pretty much are from the land. It's where I get my inspiration from.

If you take that from me, my ability to go out and do my traditional cultural practices which, in large part is hunting and fishing—you take a big portion of my culture from me. (CBC 2016a)

Public acts of resistance at the construction site, in the streets of towns across the province, and in the bodies and minds of hunger strikers made it difficult to ignore the brutal fact that the calculations and formulae devised in St. John's and Toronto meant the degradation of life along the Churchill River in Labrador. A group of breast-feeding mothers staged a “nurse-in” at the construction site. Jenna Williams, one of the mothers,

explained the impact of methylmercury on breast milk and on food security in general.

It just goes right back to the food insecurity issues ... It's a real problem—getting formula for example. If we couldn't breastfeed our children then what else are we supposed to do? (White 2016a)

Another mother carried a sign that read: “Should I get my culture at the supermarket too?”

In a 2017 interview with Justin Brake, Land Protector Tracey Doherty, contributor of a work of fiction in this volume, explained how food insecurity threatened a whole way of life in Labrador:

“It's not only the food link, it's the fact that people get out on the land to get the food—and that's physical health, the oxygen, the beauty of the land visually, and walking the trails of our ancestors,” she said. “Those are cultural connections—that psychological, social, cultural health that directly links to our well-being as people with spirit.” (Brake 2017)

Though Muskrat Falls continues on toward completion, it is important now to keep in mind how, at each point along the way, the dam was forced into existence against this wave of resistance opposed to the economic, environmental, and moral implications of proceeding toward a finished project, with knowledge of the increased risk of doing so. Completion of the dam was never uncontested and depended from the start on the ability of a distributed network of state, industry, and financial power to counter this public force of refusal.

Disturbing images of police takedowns of nonviolent protestors gripped the attention of the provincial and national media, forcing Nalcor to shut down the operations on occasion and to request police escorts for trucks and crews to enter and leave the site. Records acquired by CBC through access to information show that the provincial government ordered RCMP riot control forces to Labrador in anticipation of more

resistance. Provincial Justice minister Andrew Parsons was especially concerned about securing the movement of massive transformers through Cartwright. In a \$10 million operation called “Project Beltway,” RCMP, under authority of Parsons’s emergency measure, drew up to 135 members from forces in Atlantic Canada to Labrador. A rise in traffic fatalities along a highway on the island portion of the province was attributed to the dispatch of a high number of police officers to Labrador (Roberts 2018).

Through the fall of 2016, demonstrations and protests intensified at the site in Labrador and across the province. Three Inuit hunger strikers, Billy Gauthier, Delilah Saunders, and Jerry Kohlmeister, camped on Parliament Hill in Ottawa, demanding a meeting with Prime Minister Justin Trudeau, which never came to pass.

On Saturday, October 15, 2016, at the height of the Muskrat protests, the RCMP shut down the Trans-Labrador Highway to prevent Land Protectors from reaching the gates of the Nalcor site, but a group of them stealthily cut through a fence with bolt cutters, entered the site, and marched toward the office buildings. While other media were reporting that they now expected violence and asked when the police would arrive to protect Nalcor workers, Justin Brake, a journalist with independent.ca, live-streamed the event, which was eagerly watched by tens of thousands. What Brake’s footage showed was remarkable: Land Protectors entering the building were being greeted and hugged by Nalcor workers, who welcomed them and expressed sympathy with their cause. Brake’s reporting from inside the construction camp showed the shared concern of Land Protectors and Nalcor employees, who were crying and hugging, and then eating and playing Ping-Pong together (Brake 2016). Brake’s arrest, the subject of Robin Whitaker’s essay in this volume, became the centre of an important court case concerning press freedom, which ended in July 2020 with the Crown dropping the last of its “criminal Mischief” charges against the journalist.

Brake’s live-stream demonstrated an undeniable refutation of Nalcor’s narrative that they had public support for their plan to flood and that the Land Protectors were a few people out of touch with the sober reality of what had to happen—the flooding, the dam, the compensation.

Justin Brake has received numerous awards for his work on Muskrat

Falls, including the 2018 PEN Canada/Ken Fikow Prize for freedom of expression. His photographs, reproduced in this book, were taken in Labrador, in October 2016, as part of his coverage of the Indigenous-led resistance to the Muskrat Falls project. His accompanying essay is a powerful reflection on how the ongoing context of settler-colonial dispossession and violence challenges ideas of journalistic objectivity and balance.

#MakeMuskratRight spread as a movement to reactivate, re-democratize, and make the subject of public debate and contest what was being falsely presented as an apolitical technocratic operation—updating to a clean electrical grid. Images of peaceful protesters in Labrador refusing to be made “injurable” and invisible in order to keep the project on track showed that Muskrat Falls had always been much more than a financial or technical problem. These acts of refusal made it clear that underlying all of the calculations and errors of electrical pricing and markets was a more basic, unfair “biopolitical” equation which supposed that degrees of exposure to harm for the people living along the Churchill River in Labrador could be measured against cost per unit of electricity for homes 1,000 miles away on the island of Newfoundland.

The Politics of Expulsion

Shortly after the release of the Harvard report, Jessica Penney, an Inuk graduate student from Labrador studying at the University of Glasgow, conducted interviews with people along the Churchill River and documented the stresses and concerns felt about the impending effects of methylmercury contamination.

Jim Learning, since deceased, was one of Penney’s subjects. Learning was a well-known and vocal member of the Labrador Land Protectors. In his interview with Penney, Learning provides a vivid description of living under the threat posed by methylmercury.

It’s put what was a secure food supply, in question. And that’s a psychological factor that now you have to overcome. You either ignore it or try to tone down your expectations of the proteins you’re getting from it ... That becomes a

question. So, yes. That's the impact of that in my world.

Changes your perception of the safety that was, is gone. (59)

Learning identifies an important quality of a contaminated environment. However effective monitoring and fish advisories turn out to be, from the point of contamination on, the environment must be regarded as potentially dangerous. Everything may taste and look the same, but an insensate threat now separates people from the "ontological security" their natural world had provided.

These threats to basic securities show us an important technique of many extractive developments, which involve accumulation of wealth through a form of "expulsion" (Sassen 2014). In the sense in which Sassen uses it, expulsion refers to the increasingly common forms of state-assisted exclusion or expulsion of people from territory and access to resources, but also from existing social entitlements, rights, and basic forms of safety and security. Examples include the poisoning of farmland through fracking to the poisoning of rivers; the dispossession of peoples from adjacent natural resources; the expulsion of people through foreclosure of homes in Detroit and the rust belt to the expulsion from the economy of civil service workers and the social good their jobs provided. These very different developments are all united by similar means of capital accumulation through the removing, neutralizing, or generally expelling from collective protection of people who are of less value to capital as producers or consumers than the resources to which they may lay some claim.

Sassen says these changes involve an expulsion not only from financial inclusion but "from life projects and livelihoods, from memberships, from the social contract at the center of liberal democracy" (2014, 29). In each of these cases, as Jim Learning put it, "the safety that was, is gone."

In 2016, when the new Harvard research on methylmercury was first released, provincial NDP leader Earle McCurdy summarized the ethical cost of the project: "if we cannot afford to clear the reservoir, we cannot afford the project." In response, Nick Whalen, federal Liberal MP for St. John's East, famously tweeted: "That is ridiculous. Just measure MeHg levels, eat less fish while MeHg levels are too high, and compensate" (MacEachern and Barry 2016).

When Whalen's proposal was met with a powerful public disapproval,

he retracted it and apologized for its insensitivity. But the brutal telegraphic efficiency of his tweet captured the brutal politics of expulsion on which the project now depended.

In mid-October 2016, as protests intensified, Premier Dwight Ball issued a temporary halt to construction, which lasted for eleven days, ending in an emergency all-night meeting with representatives of affected groups. The premier's all-night meeting resulted in the striking of an Independent Expert Advisory Committee (IEAC) to make recommendations about what actions the government should take to ensure that no one was harmed by mercury poisoning.

In May 2018, the IEAC released its report, which included majority recommendations for targeted removal of soil from the reservoir and “capping of wetlands” in the surrounding area. The premier received the report and promised to review it and to consider the best course of action to take. At no time did the government ever confirm that it would take any action to carry out any of the recommendations to mitigate production of the toxin from the dam.

In June 2019, while the premier deliberated, Baskut Tuncak, the UN Special Rapporteur on Human Rights and Toxics, concluded his visit to Canada with a strongly worded condemnation of the country's “blatant disregard for Indigenous rights” in its management of toxic hazards. Tuncak (2020) drew special attention to the continued failure to clean up industrial mercury spilled upstream from Grassy Narrows in the 1960s and to the impending reservoir flooding at Muskrat Falls in Labrador.

Less than a month later, Ball—who was also minister responsible for Labrador and Indigenous Affairs—confirmed what many long feared: that the province of Newfoundland and Labrador would not carry out any measures to mitigate the methylmercury expected to result from flooding the Muskrat Falls reservoir. Ball's explanation that this inaction was due to an unfortunate bureaucratic oversight in the filing of necessary papers only served to confirm the widespread pattern Tuncak described in which Indigenous peoples “find themselves on the wrong side of a toxic divide, subject to conditions that would not be acceptable elsewhere in Canada” (Tuncak 2020).

In place of preventive measures to stop mercury production, the premier offered to three Indigenous groups \$30 million, which had

been earmarked for "wetland capping," to be divided among them as compensation for the inconvenience caused by imminent exposure to harm. Capping was, however, only one of several mitigation measures that had been recommended by the IEAC, which were estimated to be about \$742 million in cost (Careen 2018).

The cumulative effect of those series of errors, misunderstandings, and missed deadlines is a disturbing new model for managing methylmercury and other environmental risks produced by projects like this.

Compensation without mitigation is, arguably, a way of making people legally "injurable" in order to more efficiently expedite the logistics and completion agreements underwriting the dam's financing. In other well-known instances of mercury poisoning—such as in Minamata Bay, Japan, or Grassy Narrows, Canada—monetary compensation was promised to victims as redress for an irreversible past wrong. It was in some ways an attempt to include in the "social contract of liberal democracy" those who had been expelled from it by past acts of crime, negligence, or ignorance (Sassen 2014). In the Muskrat Falls debate, compensation took on a new purpose and was reworked to justify the risk of proceeding into the future without recommended mitigation measures and with full knowledge of the threat of methylmercury contamination. Measures once used as an inclusive response to an irreversible past act of poisoning, about which nothing could be done, were now being used to do nothing while something could be done.

The complex interplay of finance and contamination shows us how economic and technocratic formulae manufactured in St. John's are also immediately matters of human health, food security, and Indigenous rights in Labrador. The very different problems of rate mitigation on the island of Newfoundland and compensation without mitigation lead back to the same engine of extraction and expulsion: the expulsion of people from existing forms of food and physical security in Labrador and from monopoly protection for affordable energy security on the island of Newfoundland.

The essays and contributions collected here trace a network of legislative power, police force, risk, and financial management that it took to turn the Falls into a hydroelectric machine, the area downstream into a sacrifice zone, and the public energy system into an investment revenue stream. These contributions also consider the many forms of resistance

to the dam that flourished: protests, art, literary works, blogs, impromptu performance, and other forms of embodied refusal and grassroots community responses and protest.

Like many other megaprojects, Muskrat Falls is so big and complex that it is difficult to “cognitively map” the totality of human and technical forces it brings together and the scope of their collective effects. The technical and legal language of finance, forecasting, and contracting happens at a remove from the immediacy of the worlds it disrupts.

Co-editor Lisa Moore, in her essay here, reflects on her participation in protests about Muskrat Falls and asks how we might represent the unrepresentable scale and concatenation of problems generated by a project like this. “What kinds of images ... might capture how things feel on the ground? ... How do we represent the rage and grieving that the Muskrat Falls dam has caused?” she asks (277, 278).

Memorial art historian and professor of Gender Studies, Jennifer Dyer, offers detailed readings and analysis of some of the media and art—photographs, video, painting, fiction, and performance—that developed in critical response to the dam. Dyer places this work in a wider context of activist art that aims not only to represent the world but to confront social injustice and promote ideas of the public good.

We have included some of the works discussed in these essays, including a short story by Labrador Land Protector Tracey Doherty and artworks by Gerald Vaandering and Rhonda Pelley. These works capture in new and powerful ways the historical moment of crisis caused by the development of this megaproject and can help us think and feel the damage and trauma created by it.

Pelley’s work draws on traditions of collage, compositing, and a DIY punk aesthetic to defamiliarize images that represent our social world and environment and to re-energize them with a new power to disturb us. Visual artist Gerald Vaandering, on the other hand, works with the unrepresentable nature of the threat of methylmercury. Methylmercury poses a threat to both physical life and to cultures based around hunting and fishing. The toxin is insensate and imperceptible as it contaminates an environment and works its way up the food chain. Things look and taste the same as before but now carry a menacing “insensate sense” of threat.

Gerald Vaandering produced burnt carcasses of salmon peppered with bubbles of silvery mercury, encased in a slab of translucent epoxy. The result is something that shimmers between sacred and profane, beautiful and horrific, perceptible and imperceptible like the altered nature it depicts. Vaandering’s accompanying essay is an account of his residency in Happy Valley, where he produced the work, as new knowledge about the threat of methylmercury was coming to be known.

Since Muskrat Falls is only one of countless similar schemas at work around the world now, we expect the essays and contributions will be of a more general interest and utility to others affected by equally threatening developments that set upon the most basic kinds of collective security we will need to provide for each other in an increasingly insecure world.

Endnotes

- 1 For more on the Chalillo Dam in Belize, see Santa Clara Law School (2017) and Crocker (2019). On the Irish Water Corporation, see Bresnihan (2016). For more on the airport in Freetown, see BBC News, October 10, 2018, “Mamamah Airport: Sierra Leone Cancels China-Funded Project.” On Sri Lanka’s port, see Abi-Habib (2018). And for analysis of the Site C dam, see Hendrik, Raphals, and Bakker (2017).
- 2 “Chalillo Dam 3rd Master Agreement.” Environmental Law Alliance Network, <https://www.elaw.org/content/belize-chalillo-dam-3rd-master-agreement>.
- 3 See, for example, Harvey (2017), Hudson (2015), Krippner (2005, 2012), and Storm et al. (2018).
- 4 For an excellent archive of Labrador-focused material on early protests and concerns, see APTN’s Muskrat Falls Archive, <https://www.aptnnews.ca/tag/muskrat-falls/>. For a brief timeline of events between 2012 and 2016, see White (2016b).

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