Notes

Preliminary Findings on Niigata as an "Extractive Community"

Chelsea Szendi Schieder

These research notes detail the preliminary findings from two visits to Niigata City, one in October 2021 and another in October 2022. These research visits built upon research I did in 2020 on the development of petroleum production and petroleum storage in Akita Prefecture and in 2019 on the Yokkaichi petrochemical complex, "Yokkaichi asthma," and its commemoration in Mie Prefecture.[1)]

This is part of a larger project on how histories of industrial development and histories of social movements overlap and interact. I'm tracking networks of institutions and actors across what I'm calling "extractive communities" to understand in particular the ways in which what is often broken into separate frameworks and movements – e.g. industrial development, the labor movement, the student movement, and the environmental movement – actually overlapped and intersected in the 20th century quest for more resources to produce energy. Such an examination promises to illuminate the complex dynamics by which modern industrial development affects humans within institutions and communities.

The theoretical framework for this project is informed by social network theory and a multi-scalar methodology. Sociologists developed social network theory in the 1960s as an approach that drew on earlier theoretical traditions to understand both formal and informal social relations.[2)] For this project focused

1) Chelsea Szendi Schieder. "Preliminary Research on Akita Oil Fields."『経済研究』第 14 号 (March 2022); Chelsea Szendi Schieder. "Dissonant Temporalities of Past and Present in a Petrochemical Community in Japan."『経済研究』第 13 号 (March 2021).

2) Wenlin Liu, Anupreet Sidhu, Amanda M. Beacom, and Thomas W. Valente. "Social Network Theory." The International Encyclopedia of Media Effects. Ed, Patrick Rössler, Cynthia A. Hoffner, and Liesbet van Zoonen. (John Wiley & Sons, Inc, 2017).

on industrial development and related social movements, I hope to learn from several theoretical tools elaborated by work in social network theory regarding influence, communication, and innovation adoption. "Multi-scalar" refers to research that approaches a topic across varied socio-spatial levels (multiple scales), often with the goal of providing a more nuanced analysis of a complex issue with many interconnected actors that cannot be fully grasped at the macro-level, the national level, nor at the strictly local level.

My preliminary research in Niigata for this particular aspect of this larger project concentrated on two sites in Niigata City: the Petroleum Museum (世界の石油館) and the Niigata Learning Center for Humans and the Environment (環境と人間のふれあい館).

Niigata City may be considered a critical "extractive community" because of the discovery of natural oil there for industrial use in the late 19th century, and because of the role of "Niigata Minamata" as one of the "Big Four" pollution disasters in postwar Japan. Not only that, but the trial waged by Niigata Minamata disease victims was important for the recognition of Minamata disease victims in Minamata, Kyushu, as well.

In visiting two public-facing sites that commemorated the history of Niigata City regarding energy and modern industry, I wanted to trace their different narrativization and framing of that history. At the Niigata Learning Center for Humans and the Environment, I was interested in the preservation of materials related to Niigata Minamata disease and more broadly to pollution and the environment. Their curated selection of publications, including the donated library of Bando Katsuhiko (坂東克彦), a lawyer who worked on behalf of the Niigata Minamata victims and a leading figure in the legal battles for both the first and second lawsuits for Niigata Minamata disease recognition, helped me develop further my database of people and organizations involved in "pollution (公害) activism" broadly conceived, which is part of my larger project on "extractive communities."

"The Home of Petroleum": Memorializing Oil Discovery and Production in Niigata

The Petroleum Museum of Niigata (the literal English translation would be the "World Petroleum Museum") opened in 1988 to introduce the history of oil

extraction and the relationship between petroleum and people, mainly with a focus on the Kanazu Oil Field (金津油田), through graphics and exhibits, including exhibits of materials and technologies.

"Industrial heritage" has become a subject of great interest recently. The term "industrial archeology" was first popularized through an article published in England by Michael Rix in *The Amateur Historian*, in which Rix also decried what he saw as the neglect and destruction of England's Industrial Revolution landmarks, something he feared was because "we are so oblivious of our national heritage."[3] Rix's framing linked the preservation of historical industrial sites with *national heritage*, and it is perhaps unsurprising that the current international recognition framework of such sites is also defined as preserving heritage, for example through the UNESCO World Heritage Convention. UNESCO has recognized several "Sites of Japan's Meiji Industrial Revolution," mostly in the Kyushu-Yamaguchi region. Seeking this kind of recognition has been a part of a strategy to revitalize struggling postindustrial areas not just in Japan, but globally. However, as the trend becomes more popular, the sustainability of this as a motor to attract attention and particularly tourism and the economic benefits it brings to all postindustrial sites has also come under close questioning and scrutiny.[4]

The preserved Kanazu oil field and the adjacent Petroleum Museum are perhaps one of the earliest organized domestic campaigns for "industrial heritage" preservation in Japan, although they are not part of the cluster of Japanese sites that eventually gained UNESCO recognition. However, in 2007 they gained domestic recognition as "Heritage of Industrial Modernization" by the Ministry of Economy, Trade and Industry and in 2018 received Ministry of Education, Culture, Sports, Science and Technology recognition as a site of historical significance. In the early 1900s, domestic oil actually made up a significant share of all oil in Japan, hitting a high of 42.4 percent in 1915, when domestic consumption was mostly of kerosene.[5] The preserved oil field

3) Michael Rix, "Industrial Archaeology" The Amateur Historian Vol. 2, No. 8 (Oct-Nov 1955): 225-229.

4) Somoza-Medica, X.; Monteserín-Abella, O. "The Sustainability of Industrial Heritage Tourism Far from the Axes of Economic Development in Europe: Two Case Studies." Sustainability Vol 13 No. 3 (2021), 1077. https://doi.org/10.3390/su13031077

at Kanazu is a rare site that preserves that history through material objects and location. Whereas my earlier research on the Akita oil wells relied overwhelmingly on documentary sources, the preservation of the Kanazu oil field and of material objects in the World Petroleum Museum made for a different set of historical materials.

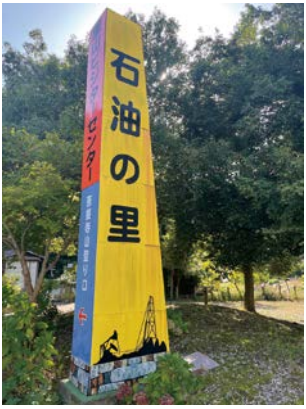

Figure 1. A sign welcomes visitors to the preserved Kanazu oil field under the moniker, "Home of Petroleum"

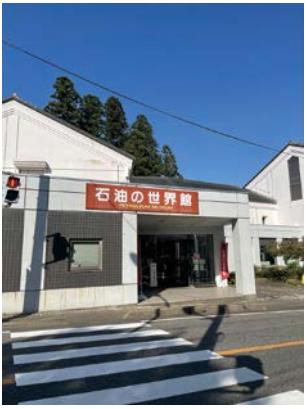

Figure 2. Exterior of the Petroleum Museum

Around the grounds of the Museum itself are several exhibits for "the home of petroleum" (石油の里) that include technologies for petroleum extraction, including a C87 well drilled by a cable tool drilling rig first used in 1941, during the wartime, and employed until 1996. Similarly, many various technologies are on display in the Petroleum Museum as well: various drill bits and "Christmas trees" (an assemblage of valves, casing spools, and fittings that regulate the flow of pipes in a well). There is a life-sized example of a "kazusabori" (総掘り) well first used to retrieve underground water in Chiba Prefecture and then installed in the Akita and Niigata oil fields. Miniature models give detailed views of the central Kanazu oil fields at the end of the

5) Naito, Takao. "The Effects of the Petroleum Industry Development on the Local Economies." Econ. J. of Hokkaido Univ., Vol. 39 (2010), pp. 29 – 37. 30.

Taisho Period and of the Fuji Oil refinery at Sodegaura, Chiba Prefecture in 1965. The Museum also houses various samples of petroleum in its many different forms, including paraffin, varied oil shale samples, and an exhibit that gives the viewer a sense of what makes some oil “light” and other oil “heavy.”

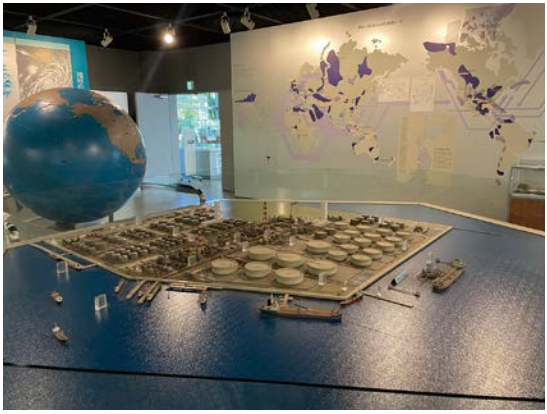

Figure 3. Interior view of exhibits at the Petroleum Museum, with the model of the Fuji Oil refinery at Sodegaura, Chiba Prefecture in the foreground

The exhibits introduce the main figures that “contributed to the petroleum world”: John D. Rockefeller, Hashimoto Keizaburou (橋本圭三郎), Charles Haas, Naitou Hisahiro (内藤久寛), Benjamin Lyman, Henri Deterding, Edwin Drake, Hirose Teigorou (広瀬貞五郎), Yamada Matashichi (山田又七), and Ishizaki Shūzō (石坂周造).[6] In particular, five Niitsu founders are also presented: Niitsu Tsunekichi (新津恒吉), Washida Shutoku (鷲田種徳), Nakano Kan’ichi (中野貫一), Magara Teiken (真柄貞賢), and Ueno Masaharu (上野昌治).

Graphics also introduce the visitor to the various products made from petroleum and petrochemical manufacturing, as well as a reverse-chronology

6) For more on Benjamin Smith Lyman’s role in Meiji government mining survey projects, see Chelsea Szendi Schieder. “Preliminary Research on Akita Oil Fields.”『経済研究』第 14 号 (March 2022);. Charles Haas was also in Japan from US at invitation of Japanese government

timeline on the Niitsu oil fields that runs from the 1974 recognition of the fields as important cultural properties and ends with the 668 mention in the *Nihon shoki* of the gifting of "burnable water" (燃える水) from Koshinokuni (越国) to the Emperor. There is a display featuring images of the earliest life forms and dinosaurs to illustrate the links between prehistoric life forms, organic decomposition, and long-term geological change in the creation of petroleum. The exhibit does not also explore how the search for fossil fuel to extract also advanced alongside the growing academic fields of paleology and paleobiology. There is a map of the 1905 Department of Agriculture and Commerce charting of the Niitsu Oil Field in Echigo as part of the Imperial Geological Survey of Japan and maps on petroleum logistics and of contemporary (as of June 1981) Japanese investments in mineral exploration and development both domestically and across the globe. A sign notes that it is often said "Only thirty years of petroleum remains (石油はあと 30 年)" but claims that due to exploration there are always new discoveries of fresh reserves. At the same time, the sign states that it is important to use petroleum efficiently and effectively.

While the exhibits do much to inform the visitor about the local and specific history of extraction at the Niitsu oil fields and offer a larger contextualization of the global petroleum industry, it remains hard to understand precisely the relational and relative history of the Niitsu oil fields and how they figure within a larger history of oil discovery and production. There is only so much that can be done with a museum exhibit format. Oil extraction in Niigata was linked closely with that in Akita, and one wonders about a discussion that might explicitly link the two areas and discuss their relationship. When Nippon Oil began exploration and eventually successful mining in Akita as well as Niigata at the end of the 19th century, other companies with head offices in Niigata and Tokyo entered Akita as well.[7] The Niigata-based Nippon Oil first established the Akita Refinery in Tsuchizaki in 1910. The port and railway station made this an attractive site, but another consideration was "the enthusiastic campaign of the people of what was then Tsuchizaki Minato Town

7) Naito, Takao. "The Effects of the Petroleum Industry Development on the Local Economies." Econ. J. of Hokkaido Univ., Vol. 39 (2010), pp. 29 – 37. 35.

to invite the refinery for local revitalization."[8] I remain curious about how the "great men" often celebrated as the leaders of development interacted with various regions and communities. On this subject, I can consult the work of Shimazu Mitsuo, a scholar and volunteer involved in the Petroleum Museum who wrote extensively on the Niigata oil fields and also on how Niigata-based oil development expanded to not only Akita but also across Japan's developing empire.[9]

On a related note, the exhibits show many implements for petroleum extraction but there is not much about who worked in the oil fields and how. A 2015 publication written by Onozawa Masaichi and published by the Friends of the World Petroleum Museum (石油の世界館友の会) includes photographs of women carrying barrels of oil on their backs, walking with children, and women in the "mud drum" (泥溜) and describes how it required two women workers to operate the "kazusabori" well (総掘り) while the "male supervisors" (担当の男性) directed the liquid flow into containers.[10] In the 1920s, Nippon Oil Co. moved many workers, with their families, from their mining operations in Niigata to Akita.[11] Such details suggest the importance of understanding interregional institutional, labor, and social links and flows to understand how this extractive industry shaped these communities.

Another element that is endemic to the history of petroleum extraction and use that remains underexplored in the exhibits is the risk of both acute disaster (e.g., fire) and long-term disaster (e.g., pollution). One exhibit does include a photograph of a fire at an offshore oil rig. However, Niigata also has its own local history of petroleum-related disasters. An earthquake in Niigata on June 16, 1964 (magnitude 7.5 / seismic scale 6) led to a devastating fire in five crude oil storage tanks at a refinery. The fire proved incredibly stubborn, and over the two weeks in which it burned it spread over an area that included housing: 286 houses burned down. The complex physical mechanism by

8) Naito, Takao. "The Effects of the Petroleum Industry Development on the Local Economies." Econ. J. of Hokkaido Univ., Vol. 39 (2010), pp. 29 – 37. 36.

9) 島津光夫『新潟の石油・天然ガス：開発の一三〇年』(野島出版 2000)

10) 小野沢正一『石油の里：金津の中野家四代』(石油の世界館友の会 2015). 17.

11) Naito, Takao. "The Effects of the Petroleum Industry Development on the Local Economies." Econ. J. of Hokkaido Univ., Vol. 39 (2010), 29 – 37. 35.

which the fire started and spread was in part created by the liquefaction of the ground, and the Niigata Earthquake was "the first seismic disaster in Japan where the liquefaction of the ground attracted notice."[12] In terms of long-term disaster, recent news articles discuss how residents of the Akiba district of Niigata City, the district of the Niitsu oil fields, have had to manage cases of oil bubbling up under their houses, possibly as a consequence of the oil wells not being adequately sealed when the oil fields closed.[13] While this issue affects private citizens, the municipal government also pays each year for clean-up of oil that leaks into public bodies of water.[14] These local disasters are not integrated into the narrative presented at the Museum.

"Connecting Humans with the Environment": Memorializing Industrial Damage and Environmental Justice in Niigata

The Niigata Learning Center for Humans and the Environment details a different specific history of long-term disaster, but also invites visitors to consider how industrial development affects the environment and human health. In 1965, the first case of "Minamata disease" appeared in the Agano River basin of Niigata Prefecture. Minamata disease is the set of symptoms associated with methyl mercury poisoning, named after Minamata in Kumamoto, Kyushu because it was the first site in which people complained of such symptoms. The pollution that caused Minamata disease in Niigata was caused by effluent from a Showa Denko K. K. factory into the Agano River.

The Niigata Learning Center for Humans and the Environment was built in 1995 as part of the resolution between the Niigata Minamata disease victims' group and their supporters and the company, Showa Denko K. K, whose pollution caused the disease.[15] It outlines three goals:

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12) Akatsuka, Hirotaka and Kobayashi Hideo. "Fire of Petroleum Tank, etc. by Niigata Earthquake." Failure Knowledge Database, 1-11. 1. http://www.shippai.org/fkd/en/hfen/HB1012035.pdf.

13)「止まらぬ石油に住民悲鳴，新潟・旧油田跡「手作業もう限界」日本経済新聞 2013.8.17. https://www.nikkei.com/article/DGXNASDG1504Y_X10C13A8CC0000/

14)「原油の異常湧出続く市，回収しても「使い道ない」…池に流入して水面真っ黒」読売新聞 2019.09.26. https://www.yomiuri.co.jp/national/20210925-OYT1T50083/

15) http://www.fureaikan.net/guidance/

1. To facilitate learning about the victims of Niigata Minamata disease and their history, and to make it possible to hear the victims' experiences.
2. To facilitate experiential learning about water and aquatic environments in nature.
3. To help with individual and group study about environmental education and environmental safety at schools.

To summarize what was actually a long process of organizing and legal proceedings, in 1967, certified patients of "Niigata Minamata disease" brought their case against Showa Denko K. K. to the courts. They won in 1971, but the requirements to get medical recognition became stricter. Another case was thus brought against the offending company *and* the national government in 1982, this time by uncertified patients. This latter ruling found Showa Denko guilty in 1996, but absolved the government.[16)]

The Niigata Learning Center for Humans and the Environment emphasizes the health not only of humans but also of aquatic environments in general. The first exhibit that greets the visitor is an underwater scene, in which live fish swim in large tanks. The staff at the Center told me there was a pedagogical purpose to this: that school groups of students who visited were often deeply impressed by this sensation of being "plunged underwater" at the outset.

The exhibits emphasize how water is used and the relationship between humans and the environment as a lesson. An oft-repeated phrase is "What we learned from the Niigata Minamata Disease" in the English guides to the Center (「新潟水俣病が教えてくれたもの」in the Japanese). As in the Yokkaichi Pollution and Environmental Museum for Future Awareness (四日市公害と環境未来館), the Niigata Learning Center for Humans and the Environment includes a discussion about the "Light and darkness of economic development" and of the "Big Four" pollution events of the 1960s: Along with the methyl mercury-induced Niigata Minamata disease and Kumamoto Minamata disease, the Learning Center's exhibits introduce the cases of

16) Seki, Reiko. "Participatory Research by Niigata Minamata Disease Victims, and Empowerment of These Victims." International Journal of Japanese Sociology, No. 15 (2006): 26-39. 27. Seki's article details the latter case of "uncertified victims," particularly how victims found empowerment through their participation in the movement.

Yokkaichi asthma caused by industrial air pollution and of “Itai itai” disease caused by cadmium poisoning in Toyama.

There are many materials from the movement to gain recognition and compensation for the suffering of Niigata Minamata disease patients. One powerful example is the sashes worn by activists that read: “Showa Denko reparations for all damages!” (「昭電は全損害を賠償せ」); “Give me back my father, give me back my son!” (「父を返えせ，息子を返えせ」); and “Eradicate pollution! (「公害根絶」).

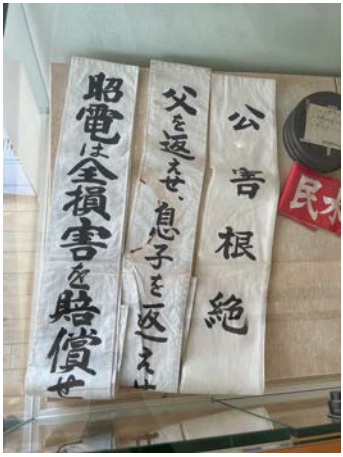

Figure 4. Sashes from the movement to recognize and compensate Niigata Minamata disease victims and their families

Many graphics explain the science of mercury poisoning and the complex legal procedure for certification of Niigata Minamata disease. The exhibit also breaks down the timelines and legal arguments in the two Niigata Minamata disease lawsuits. It gives the arguments by both the plaintiffs and the defendants, as well as the judgement.

Exhibits at the Learning Center also discuss other cases of pollution beyond the “Big Four” in Japan. There is discussion of air pollution in the early 1970s in Niigata Prefecture, and a global map of mercury pollution. Some of the events introduced here are shockingly recent, for example cases in which a researcher found high levels of mercury in the hair of pregnant women in New

Zealand in 1990, or when researchers in Denmark found high levels of mercury in fish and seals in Greenland in 1991. Concerned people from Niigata still participated in multinational gatherings to discuss mercury pollution throughout the 1990s.

A key figure in the exhibits is the lawyer Bando Katsuhiko. There were several newspaper clippings about his death when I visited in 2021. The center includes a small, carefully curated library that includes Bando's private collection, and for my further research I plan to consult his extensive legal archive and writings. The plight of Minamata disease patients in Minamata, Kyushu, has garnered much more attention in the memory of the domestic and global environmental movement, in part because of the various cultural products that popularized their struggles, ranging from the writings of Ishiimure Michiko and films of Tsuchimoto Noriaki to the photographs of W. Eugene Smith. What I would like to do in my research is to better understand how Niigata Minamata disease victims and their supporters connected through networks of activists and institutions across labor movements, extractive industries, and local community groups to understand energy production and consumption and ideas of progress and "the environment" in Japan and the world in the mid- to late-20th century.

Closing with Further Questions

Aside from the many document-based resources preserved in the Niigata Learning Center for Humans and the Environment, there was also one curious display among the effects donated by Bando Katsuhiko: black rocks piled in a glass case. A small note in the corner explained that it was coal from the Miike mines. In his autobiographical writings, Bando writes of how deeply he was impressed by his visits to Omuta and the Mitsui Miike Mines in 1960. He witnessed how, each morning, coal miners organized by the union and their families would gather outside the walls that detained their comrades and sing to them.[17] Bando frames his future activism as a lawyer on behalf of the Niigata Minamata victims as being inspired by such events. As I looked at the pile of coal, I reflected on how I had viewed so many samples of the carbon-

17) 坂東克彦「新潟水俣病の三十年：ある弁護士の回想」（日本放送出版協会 2000）, 14.

based materials that fueled our modern world at the Petroleum Museum and now, at the Niigata Learning Center, I also encountered these carbon chunks as I read about the ideas and emotions that fueled another element of our modern world: the critique and questioning of the costs of industrialization.

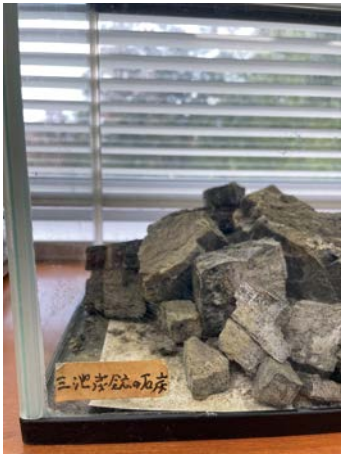

Figure 5. Bando Katsuhiko's glass case with Miike mine coal

Sifting through the archives assembled and preserved in Japan's "grassroots archives" helps me better understand this less literal but no less influential form of "energy transfer." And these networks, much like industrial production chains and their resultant pollution, were not necessarily contained within national borders. One of the defenses launched by Showa Denko in Niigata was that other factories around the world employed the same industrial processes with no mercury contamination, and the scientist-activist Ui Jun's drive to travel widely and connect with other communities subjected to industry not only bolstered victims' cases in Niigata but also alerted other communities across the world to strategies to detect pollution and hold industry accountable.[18] Ui Jun titled his 1979 book "Walk and think" to emphasize exploration of the world and connecting with other people as a way

18) Avenell, Simon. Transnational Japan in the Global Environmental Movement. 2017: University of Hawaii Press, 58.

to understand our increasingly connected world.[19] Examining how these two various museums in Niigata narrate industrialization and its effects raise more questions that require more sustained research: on how disasters of various temporalities are understood in relation to histories of industrial “heritage;” on how industrial labor was constituted; on how local elites related to national and global elites within geopolitical frameworks of state-building, colonialism, and war; and how an awareness of the negative effects of such development informed a critique and an understanding of society and environment.

Acknowledgements

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19) 宇井純「キミよ歩いて考えろ」（ポプラ社 1979）