

Environment in Asia Lecture Series featuring Victor Seow – How to Write a History of Energy in Modern East Asia, April 6, 2022

- [Mark] Hello everyone and welcome to today's talk. We will get started momentarily after we give another minute or so for people to log on. We thank you very much for joining us.

- Victor, let's wait for two more minutes.

- Oh perfect, thank you.

- This will be my first time on the other end of a webinar. And so, I didn't quite realize that I could see some of the attendees also at the like, but very nice to see familiar names on the list.

- Right, right. Many common friends, I assume.

- Yeah.

- All right, I assume the rest of the audience will come in, in the next few minutes or so. How about we just get started?

- That sounds great.

- Great, all right. Everybody, good morning, good afternoon, or goodnight, good evening, if you getting into the meeting like I do from China. So welcome all of you wherever you are, thank you for participating in another event for the Environment in Asia Series, hosted by the Fairbank Center for Chinese Studies at Harvard University. My name is Ling Zhang, Zhang Ling. I am an Environmental Historian for China. I teach at a Boston College as a Associate in Research. For the Fairbank Center, I convene this research series. So I welcome you all to our platform, to our series. And it's very exciting today. We are inviting, we have the great honor to have our wonderful friend and the faculty member at Harvard and also a member of Fairbank Center to speak to us, Victor Seow, Xiao Jianye, Professor Xiao Jianye. He's gonna talk about his new book and talk about his experience of writing that book with us. Professor Seow is a Historian of Science and Technology, and also he works on Environmental History. He specialized in studying industrial societies for both Japan and China, and overall by and large East Asia. So he's today here with us to talk about his newly published book, entitled the "Carbon Technocracy," published by Chicago University Press. And I think the book is hot off the press. I don't have a physical copy in hand because of traveling, but Professor Seow has a copy in his hand. Congratulations. I've just finish reading the book. It is a fantastic read. So I encourage all of you to participate in our conversation, raise questions, share your comments, and afterward go to bookstore to pick up a copy and enjoy it. So without further ado, let's just move into today's event. So today, we're gonna do things slightly

differently. Professor Seow, again, to talk about the book for a short period of time relatively, I think maybe about 15, 20 minutes, right? And then, we will have a slightly longer period of time for he and I to form a conversation because I really wanted to dig into his research and writing experience. I wanted to push him to talk about those issues. And then let's hope we can leave about 30 minutes or 35 minutes for Q and A. So I believe most of you are familiar with the format webinar, so you can see us, but you can not see each other. And you cannot see each other's questions either. So the way to do Q and A is you type in your question into the Q and A function, and so I will serve as your moderator of the conversation. I will read out the questions loudly and clearly as clearly as I can to the rest of the audience. So that is how we are gonna do things, okay? So please participate, type out your comments and questions, share your thoughts in the Q and A section. So here we go, Professor Seow. Victor, here is your space now.

- Thank you. Thanks so much Ling for having me here in this series and also just for this great work that you do in this series, Environment in Asia for the Fairbank Center. A big thanks also to Mark Grady for running logistics. He is the force behind all of this that's happening right now. And a big thank you to everyone who's here, who's joining us today to listen to me, talk a little bit about the book, but also more importantly, for this conversation that Ling and I will be having about writing energy history more broadly. And I look forward to your participation in the questions as well. So as Ling mentioned I have some remarks prepared, but she also asked, and perhaps this is apt for a session that's gonna be about the writing, for me to read the first bit of the book, the first few pages. And so, I'll start off with that. I'll go into a short presentation that situates us geographically and temporarily in Fushun, and to just touch on very briefly, some of the main interventions that hopes to make, the book hopes to make in the fields of history of environment and energy in modern East Asian history and history of technology and labor. But I will first maybe give you one of my favorite scenes of Fushun or images of Fushun from a postcard from the early 1930s of the massive open pit. And it's with this that I'll start reading over here from the introduction. I came in search of the origins of China's modern industrialization. I found instead, the beginnings of its end. Before arriving in the coal mining city of Fushun in the summer of 2011, I had seen old photographs and read historical accounts of its colossal open pit, first excavated by Japanese technocrats almost a century earlier. Pictures of the site showed an expensive industrial landscape molded by the machine: large excavators, electric and steam-powered shovels, and dump cars hewing rock and moving earth to bring this cavity into being. The Japanese poet Yosano Akiko, who visited Fushun in 1928, described the mine as quote, "A ghastly and grotesque form of a monster from the earth opening its large maw toward the sky." At first glance, the real thing did not disappoint. It would've been easy to mistake the gigantic depression in the ground for natural formation

such as a valley were the sides not cut into steps of recognizable regularity: like terrace farming, but for harvesting shale and coal. I had been brought to the pit by a colliery representative eager to show off the sight. As our car trundled down a rocky road into its depths, I could not help but notice that the mine was far less busy than I had anticipated. Along our descent, we passed by a single dump truck, loaded with debris. Imposing though it was, its wheels twice the height of our sedan, it appeared to be the only sign of work on site. Overhead, the sky was almost too blue for an industrial city, certainly so for one that for decades boasted East Asia's largest coal mining operations and that was once known as "Coal Capital" in Chinese, Mei Lu Japanese Tan Tuo. Fushun is located in Liaoning, the southernmost of the three provinces that make up China's Northeast, a region formally referred to as "Manchuria." Sandwiched between layers of green mudstone, oil shale, tuff, and basalt, massive stores of coal lie beneath the city. For the past hundred or so years, this coal has been mined in spades. The South Manchuria Railway Company, Mantetsu for short, the Japanese colonial corporation that ran Fushun's coal mines for much of the first half of the 20th century, developed them into an extractive enterprise of staggering proportions. In 1933, Fushun accounted for almost four-fifths of Manchuria's coal output and more than a sixth of the coal produced in the Japanese metropole and its colonies. It was the pitch-black heart of Japan's empire of energy. The Chinese communist continued to exploit Fushun's carbon resources after taking control of the area in 1948. In 1952, the colliery then still China's largest produced over 8% of the country's coal. Decades later, the speed and scale of its extraction have proven unsustainable. Fushun's current annual output is less than 3 million tons, roughly a third of its 1936 prewar peak and a sixth of its 1960 postwar height. Wasteful mining practices in the past have compromised present and future production. While about a third of the estimated 1.5 billion tons of total coal deposits remain in the ground, mining these reserves risk triggering landslides and subsidence that have caused infrastructure to crack and buildings to sink. According to a 2012 government report, as much as two-thirds of Fushun's urban area rests on unstable ground. As one recent commentator puts it, quote, "Today the mineral that helped turn the city into a booming metropolis of 2.2 million threatens to bury it." This book explores how Chinese and Japanese states, in attempting to master the fossil fuels that powered their industrial aspirations, undertook large-scale technological projects of energy extraction that ultimately extracted a considerable human and environmental costs. Nowhere is this more evident than in Fushun. Although the former Coal Capital's fortunes may now be flagging, the packing of fossil fueled development that enabled its rise persists into the present. As we confront a planetary crisis precipitated by copious carbon consumption, the history of the Fushun colliery offers us a genealogy of our current predicament. So that was a passage that so Ling had marked out for me to read with. And I'll just proceed with some remarks then to further situate us. So just to give you a sense of where we are, that's on the left over

there, you have a map of major coal mines and railway lines in East Asia circa 1935. And one of the reasons why I wanted to sort of map up the relationship between those two things was to sort of show, how this regimes of transportation and energy were intertwined with one another. In any case, Fushun is marked out in circle in red over there, as you can see, and also in the inset. And this was to give you a sense Manchuria also, the scale of it is roughly the size of France and Germany combined, and Fushun is in the Southern part of it. The coal mines were, had been opened by Chinese merchants at the turn of the 20th century. These were mines that drew in considerable amount of Russian investment. And was on the basis of this Russian capital that Japan would lay claim to them after its victory in the Russo-Japanese war of 1904, 1905. And from 1907 onwards, the coal mines were managed by the powerful colonial corporation, I had mentioned earlier, the South Manchuria Railway Company or Mantetsu, which interestingly, I mean, which we often compare to by interestingly, even at that time model itself upon the British East India Company. Under Mantetsu's management Fushun grew to the scale that it did that I mentioned earlier, but it also served as a laboratory for empire where technologies start in place in the home islands were tried and tested, developed, and deployed. And these include hydraulic stowing for fuller excavation of subsurface seams, mass fingerprinting for labor control and the distillation of liquid petroleum from the thick seam of oil shale that overlay the coal. So the book spans around 1900 to 1960 after the empire falls, Japanese empire falls in 1945. Fushun was seized first by the Soviets then by the Chinese nationalists and finally, the Chinese communists, and it plays an important part in fueling the new socialist estate's industrialization drive in the 1950s. So there are three main interventions. There are a couple of things I want to do with the book, but three main interventions I wanna highlight here before we proceed into our conversation. That relate, as I mentioned earlier, to energy and the environment to modern East Asia and the history of technology and labor as follows. And the first is in regard to the state and the fossil fuel turn. So this one main question that deeply interests historians of energy and it's this you know, how do we explain the transition to coal and other fossil fuels and the subsequent intensification of their use. And scholars have looked at this question from multiple angles, they foregrounded big factors address the ecological limits of economic growth. And the forces of capitalism on the one hand or small factors that became big in the aggregate, such as the machinations of industrialists and the choices of consumers. And I can see a little bit more about this later when I know Ling was interested in some of the historiography, I accentuate this book in, but the one thing I would highlight was what oftentimes fades in the background it's left in the background of these accounts is the state, which I have found both surprising and yet not in that, the modern eras one in which the state is this overwhelmingly influential and invasive force, and yet concurrently, it's sort of insidious and at times even invisible. So the images I have for you here of Mao visiting Fushun in 1958 during

the disastrous national production campaign, the Great Leap Forward, that's the one on the left. And the one on the right is a poster, another poster from the proceeding first five-year plan that reads coal is a grain of industry, which is sinification, if you will of Lennon's maximum coal is the breed of industry. And I've put this up because both are visual representations of the socialist state's commitment to be intensive extraction that made possible as pursuit of fossil fuel development. And I detailed this in the last chapter of the book, but what I showed in the account that leads up to it is that the pattern of predaceous production was true of the Chinese nationalist and Imperial Japanese regimes that came before. And so if I situate this within this larger claim that energy or trying to highlight the fact that energy resources undergo at this range of status preoccupations from economic production to the waging of war and how states then came to see ensuring this study and growing supply of fossil fuels as essential to their very objectives and ultimately to the survival and extension of power. And they turn to some of the latest developments in science and technology from geological surveys to locate subterranean deposits to mining engineering for the exploitation of these resources, the sort of resting these riches from the earth. But in the extractive exploits were not only extensive, but extravagant and I've termed this system, Carbon Technocracy because it rested on an unwavering, sometimes uncritical belief in the superiority of science and technology in the practice of statecraft, and relied upon methods deemed scientific, and technological in the mastery of fossil fuel so central to the project of the modern state. The second intervention I wanna make is in regard to Imperial Industrialization and the legacies of empire and the pair of images I have for you of the massive winding tower at the Longfeng shaft mine, which was once competing for the tallest in the world. And on the one on the left, you see the Mantetsu flag and the Japanese flag. And this is from the '30s when it was raised. And then the one on the right, you see the communist star, this is from the 1950s. And the question it gets to is as follows, you know, what are the economic legacies of empire? And oftentimes this question is asked in relation to the redee- I mean, quote, unquote redeemable aspects of imperialism, but are they let themselves as developmentalist legacies that empire had left behind. And before I get Zoom bombed by folks for being an apologist for imperialism, let me explain myself. So something I do in the book is to highlight the Japanese continuities that contributed to China's post-1949 industrialization. And that's not only in terms of these buildings that were left behind, but also Japanese engineers that remained after the war and revolution to not only assist in the rehabilitation of devastated industry, but also in part knowledge and expertise to Chinese counterparts. You know that part of the Japanese legacy in Manchuria was industrialization and economic development might seem like an inconvenient truth for those of us who are opposed to the idea of imperialism. And I hope that, all 71 of you in the audience right now, likewise opposes idea of imperialism, but I argue it's no reason to cherish the memory of Japan's empire. Aside from the

fact that Manchuria's economic infrastructure was established on the backs of countless Chinese workers. It also needs to be stressed that the Japanese architects of the region's industrial edifices almost certainly had not raised them for the benefit of their colonized subjects. Furthermore, this issue of Japanese contributions to the post-colonial mentoring economy may be easier to accept if we recognize that the large scale Coal-fired industrial expansion did not yield positive outcomes for all, or even many sectors of the local population, to say nothing of the environment. We can then acknowledge Japan's quote, unquote, "positive" economic impact on Manchuria without celebrating it. Now, a portion of this fraught inheritance then that Imperial Japan's bequeathed to its Communist successor, so visible in Fushun with this technological infrastructure and technical expertise for the constitution then of carbon technocracy. Now the third and last main intervention, I want to highlight today relates to technology and labor. Now, one of the reasons why Japanese Democrats had pursued open-pit mining, where not only to extract greater quantities of Fushun's carbon resources, but also to reduce the reliance on Chinese labor, which they deemed unreliable at best. To excavate this pit, the Japanese manager at that time, Inoyue Tahashiro had brought in geologists and engineers from the Mesabi Iron Range. These were experts from the university of Wisconsin, Madison and from University of Minnesota, as well as engineers who worked the scenes from this particular area. And in his proposal for this excavation, one of these American engineers would claim that his methods would ensure increased output that could be quote, "maintained in the face of possible labor shortage and strikes." Yet for all its efforts at mobilizing the machine, The colliery never did seem to be able to truly diminish its dependence on labor as targeted production rose from year to year, this industrial apparatus consistently required tens of thousands of workers to keep its cogs turning. But at the same time, this also meant subjecting more and more miners to the dangers of an environment engineered for intensive extraction. So Fushun's biggest coal mining disaster takes place here at the Oyama mine. I lost my circle for it, but I assure you it's about lower left side, maybe if I have the cursor... Oh yes, here it is. But it happens in 1917. And this was an explosion that destroyed the ventilation fan room above and it resulted even in a blackout in the nearby town. But to give you a sense of how, you know, these environments are not only made possible for extraction by these new mechanisms, but also in the failure of these mechanisms, return to the dangerous state or become particularly hazardous. You know, with the ventilation room blown up by the explosion, the airflow could not be regulated and operators could not shut off the circulation of air that was then sucked into the mine to further feed the fire. Decades later, one survivor would contend that quote, "for the sake of coal and without regard for the lives of the Chinese miners the..." And this is the derogatory term, "the small Japanese devils forced the people at the top of the pit to close off the bounds with mud," basically to suffocate the fire. And because of that, the workers below had no way to escape. In total, 917

perished, 17 Japanese and 900 Chinese. Now, many of the disasters and accidents that I document in this book were a result of mining too much or too quickly, or without proper maintenance of equipment, observation of safety, particularly with escalating demands into and through the war. But this persists also into the socialist period, and over here is an internally circulated document that decries the fact that Fushun's safety record was the worst that it had been since the 1949 revolution. This comes from 1954 and materials. Production had exceeded targets, but accidents were plenty. And as a result, some workers started to complain that quote, "The coal is paid for in human lives" So it sort of echoes even the critique of the Japanese period. And this continues thereafter, and with the impact of such accidents, increasingly being computed in terms such as lost work hours, foregone production, and capital expenditure. And again, the human element and the human cost of this, fading further to the background. And the irony in this is evidently, the socialist state had been highly critical of the Japanese and nationalist regimes that preceded it in the disregard for workers as they exploited Fushun's coal resources, and here the similarity was all too striking. For coal mining and in other areas, they wound up perpetuating some of the very worst of former accesses from the wasteful extraction of resources, the ruination of landscape and the exploitation of workers whose labor sustained this endearing system of carbon technocracy. So today as my introduction, as I read earlier, Fushun's pass its days of industrial glory. And that blog actually begins here with this museum, which was also being built during my first visit in 2011. And it was meant to commemorate this industry that built the city and fueled a nation. But even then it seemed to me like a bit of a death knell, the de-industrialization that the region had been infamous for had become all too evident all around. Four years later, so that was 2011, four years later, this article comes outta the New York Times. I cite, I think it says that how beautifully, coal, which built this Chinese City, now threatens to bury it. And four years after that, the open-pit mine, which incidentally lies beyond the museum, the observation tower there is meant for you to go up and take a look at the operations of the open-pit mine, and that the operations there cease in 2019. And so to some extent, my approach to, in this book is almost too obvious. You know, I said, I'm setting up to write a history of energy, and I look at a site of energy extraction, but mine site Fushun, but not only kind of fuel the appetites and ambitions of states that are, which is such a central part of the story I tell. But to me, I think they're important because they also served as microcosms for this larger system they sustained in that, Fushun's history reflects the hubristic attempts to tame and transform nature through technology, the misplaced valorization of machines over human beings, and the productivist pursuits that strained both the environment from which coal was extracted, and the many workers on whom that extractive process so deeply depended. And so to just conclude my remarks here, I will read the last paragraph of the introduction that goes back to this question and allows us to at least suggest that this is a story

that is not only of East Asia. I mean, it's in East Asia and it's framed off of East Asia, but it's also has larger global resonances. So I make a reading here. It may very well be as Louis Mumford has suggested that quote, "The mine is the worst possible base for permanent civilization." His rationale was that quote, "When the seams are exhausted, the individual mine must be closed down, leaving behind debris and deserted sheds and houses." Although Fushun's coal deposits have not been entirely depleted, difficulties in continuing mining operations have brought the former Coal Capital to essentially the same point. According Mumford, again, the byproducts are befuddle and disorderly environment, the end product is an exhausted one. As I travel through Fushun that very first summer, and in trips back after, my eyes would be repeatedly drawn to the mounds of dusty rubble strewn across this deindustrializing landscape, particularly around the individual mines that have closed down in succession. We who live in this world that carbon made have yet to use up all the quote, unquote, "buried sunshine" beneath our feet. But we see similar effects, a result not so much of coals exhaustion as it's unrelenting use. As we now begin to reckon with the harrowing devastation wrought by climate change, Fushun's fate appears, then, to be nothing less than a chilling microcosm of this most pressing of our planetary problems. So thank you for listening and I look forward to conversation with Ling.

- Thank you so much, Victor. This is a really powerful way to introduce this really rich book. And I think there's several points that you've already made. And maybe if we have time, I'd like to sort of talk more about it, for instance, this issue of continuity of a carbon technocracy throughout 100 years until the very end. Honestly, the suspension, the end of a production of the mine. So there's a long continuity, it's very interesting. And so, just wanted to interrupt myself again. So let's see if anyone's doing Zoom bombing. Apparently up to now, we don't have a Zoom bombing in terms of this imperialism issue, but let's see what's gonna happen there. And the second point I noticed is very, very interesting, and I hope if we get time, you can elaborate more. That is the unintended consequences for whatever purpose, the military empire of Japan, and the nationalist, the government, and the Soviet union play little role in your book, right? Some role in your book, and then Communist of China, all these different regime for various purpose. So they dive into this gigantic pit of a Fushun's coal mines. And for sometimes they carry out the developmental regimes with some good intentions. But unfortunately, you touched upon in your book, all these various unintended consequences, ranging from explosion to the human, the loss of human lives, all these violence. So if we get time, which you can talk more, elaborate more on that. And the third thing it's really powerful to hear you talk about the opening sentence for your book. You come here to look for the beginning, Chinese industrialization, and yet what you found is the beginning of its end and the last slides you and the pictures you showed us, really show us at the ending, and yet this ending is itself. I remember in one of them, your paragraph, maybe

it's in your epilogue, you talked about the Fushun, this coal mining, I forgot the exact sentence, but it's talking about the history over the past and history of the future all together either can be witnessed here, to be buried here. So it's a really powerful imagery to think about the long term history can be understood. It can be witnessed at this relatively small site. So the meaning of a Fushun, in this broader context of the Anthropocene, the climate change, this is a huge, if we think in this way, this is a huge contribution for this book. Open us to the conversation about Anthropocene, about climate change, about our common future, and that you beautifully in this book set our past and the future. In the long term, you know, geological time, even though at the opening of your remarks, you said your book is really about 100 years, but I wanna tell our audience actually, there's a actually speaks to millions of years of a geological time. And you, as the author use this only 100 a years to try to open us toward that millions of years. So I think that's really powerful. If we have time, I hope you could elaborate more, but here, let's see if we do have time, but here tonight, we have a special, you know, I have a special purpose here. We both agree that we wanna talk a little bit about writing as well. So as I was holding, actually holding my computer, reading your book, I was really thinking, you know, while in Chinese, we have this saying, , it takes 10 years to forge a sword. And you mentioned to us in 2011, it was the first time you visit Fushun and your researcher seems to have begun, started before 2011, right? So it took more than 10 years to produce this book. And it's a huge undertaking, and it's very important undertaking. But as an audience, readers, we normally see the end products, right? We see the books in hand. So the long, the history, the prior, the pre-history of the book, the process that you forge the sword, you produce the book that got hidden. And I think this is so important that I think you share my view that we actually share with each other this experience. So I wanted to really, to ask you to talk about as a scholar who started this project and as a writer, how you wrote this a book, right? So let's begin with working on this a project, how did you found this a project and what was your experience doing there? Why this project was so special to you? And if it's possible, you can also introduce a little bit about, the struggles, challenges you encountered during those years, you visit Fushun, and you dealt with archives of different languages, so yeah.

- Thank you so much for that question Ling and for your generous reading of the book and your comments, opening comments, I'm not sure about Tien, this is on some or sort, on some level I feel is more kind of a situation that's just one needle as it was, but, you know, a needle can still be painful and it was a painful process working on this book for sure. But I think the interest, maybe when talking about the history of this history and maybe the interesting point to begin with was that it didn't start out as a history of a coal mine to, my interest was not to write a history of a coal mine. And I actually kind of followed the migrant workers there. I was interested first and

foremost in human labor and human migration into Manchuria. And there are two main reasons why I was interested in this. First was really the scale of the migration. And it was, I mean, I'm from Singapore originally. And I tend to think that Southeast Asia is this big catchment area for overseas Chinese migration. And it seemed so, but one of the most startling things I came across, I think, and this was in similar book on migration, was that the amount of people who moved to Dongbei at that time, the Northeast exceeded the amount of Chinese moving to Southeast Asia. So I thought, oh, that's very interesting. That's a large migration. And largely from North China to Northeast, the people who are of Chuang Guandong and are charging east of the pass. And so that was one reason, it was the scale of this. And the second thing was that it crossed political divides also, which, and I mean, it's something the book does, but something I've been really interested in now for a while that this migration persists on such a large scale in the hundreds of thousands, even after Dongbei becomes Manchukuo, until becomes Manchukuo in the '30s. And so in which this, what was ostensibly an internal migration becomes an international one. So I was interested on both ends on the sort of the new institutions that were used to govern these bodies, that, and these human beings and who are going to Dongbei to work, but also how these individuals navigated the shifting political and institutional landscape and away from discourse of nationalism, for instance, and navigated that relationship between empire nation. And so I started some research in Xiang-Dong, I was going through some of the archives there, and I found some interesting things on migration to Dongbei, but then it all seemed to really kind of scattered to me at that time. There were debates in the late '40s, early '50s about, what do you do during Tukai, during land reform with the land that was left behind by the people who were often Manchuria, and may or may not still be there, but it all seemed really scattered. And so I thought, maybe I should go to Dongbei itself and look at the receiving end. And as you might know, like even Dongbei, Northeast China it's kind of infamous for the closeness of its archives. I mean, if you think that Chinese archives are generally closed, Dongbei in particular is another level in and of itself. And part of it, I mean, I suspect is because of the fraught nature of the Japanese presence in the region and what this means for property, and who holds property, and the like, so that there may be some sort of actuals of legal remedy and stuff. Actually, I imagine legal ramifications for keeping some of these archives very open. So I was like, okay, I'll go anyway. So I took a boat from Yantai to Dalian, and that was the passage that most people who were migrant laborers were going as well. Although I bought the cheapest ticket and still was very comf- it was actually 2010, pretty comfortable. And I went to the archives there and initially was at Dalian Municipal Archives. And I said, okay, I'm really interested in industry that drew all this labor, I'm interested in economic stuff. And they gave me a whole bunch of really promising looking documents. And then they say, oh, can you give me your I'm like, oh, that's my ID card. And I was like, oh, actually this is my passport. I'm not

actually a Chinese National. And they sort of took back most of the documents. And this is a sort of a familiar story for many folks. I would imagine went back to the Guanzhang's office, the director's office and I was given a sliver of the material that, and mostly of statistical reports and Fushun came up a lot in those reports. And so I started paying attention to it. And then I found that there was a whole host of sources in Japan that on Fushun because of how important it was as a site for energy extraction. And so I decided, I picked the site and I thought I work on this and soon after working on it, I realized that the interesting story to be told, I mean, I'm really interested in the human labor story as well, but what exactly were folks extracting from the ground, and the story the coal had to tell? So I hopped into a, I mean, I was doing my grad school. I was also doing my PhD here at Harvard and I went over to our earth and planetary sciences department, and started taking class in economic geology to better understand the coal and fossil fuels from a different perspective. And I think, and I hope that's off informed also the way in which I present this in the book. But yeah, I mean, I think maybe to end my remarks here, the one full circle that I take then through my writing of the book was, it started with labor, it was this fascination with energy in-depth. This cog material sources, resources, and then by the end of this story, and it self reflect in the book too, I wanted to return to the human beings who were so important, the workers who are important in sort of the working of these sites and the extraction of these resources that sustained modern industrial society, as we know it and to foreground their stories too. And so that becomes the note on which I end the book, but it was also reflective of my thinking and how my thinking about the project changed over the, oh my goodness, the decade to write this book. And I mean, I could say more about sources and all these other things, but maybe I'll say it, I'll leave it at that

- Yeah, well, you know, I'm trained as a Medieval Historian and we're dealing with totally different bunch of sources. So this experience visiting archive, but being turned the away. It sounds like brand new, it's a totally different experience from my own. So it's fascinating to hear, but I wanted to echo what you just said here. When I read your book, I did get a strong sense, for instance, in a chapter about Japanese, the managerial structure of the mine, you actually spell quite a bit ink on detailing how they manage the human bodies, how they manage these workers, how to educate them. So I think the human story you begin with, actually came out really strongly throughout the book. I think that's one of the many highlights of the book. And the other thing you mentioned, you went back to Harvard and I start work on, take a courses and for earth of science. And this actually is another part of your book I really enjoy. And I think for our audience, when they start reading, they perhaps gonna found out too, you pay great attention to science and technology. And I really appreciate that. Actually, you spend a lot of time talking about the mining techniques, the machines, how they use different methods, and

you spent quite a bit time to introduce what exactly they meant and how things worked out. I think this is actually very inspiring for someone working on environmental histories and I've been always thinking, how can I actually get the stories as accurate, accurate, and as real as possible? So with this, actually I wanted lead us into the writing questions. There's so many other issues you may like to return to later, but let's talk about writing. Tell us how you wrote this book as a scholar, as a writer, and the reason to our audience. The reason I ask Victor to talk about writing is because based on our previous communication, I know he is very dedicated, very thoughtful writer. So I don't wanna miss this opportunity to hear it from him.

- Thank you, Ling for this. And I mean, and one of the reasons why I also sort wanted the foreground writing, where we were having our back and forth about this session is I oftentimes feel that this is, I mean, something that we all do as historians and scholars, but then it's oftentimes really black boxed. And then we... I mean, I think it's really important to talk about the ideas that the content that's being presented, but what's the form and what are the choices that we make in self constituting this. So I'm glad we have a chance to chat about this, but maybe one of the things that I would mention that was both the, I think the potential and promise of, of the project, but also became one of its challenges was writing across these multiple regimes. And it was on the one hand, it was sort of quote, unquote "easy" because it allowed me to sort of do the follow chronological march, so the six body chapters have a rough kind of chronological march across time from 1900, but it looks back into the deep past, but I tell that as a story of the Japanese geologists and managers trying to understand the deeper past, so that became a story within a story, but then it ends in 1960s. And so it allowed to me to sort of tell that comparative, that connective story that ultimately also becomes comparative. But what I found challenging in the soft writing process for this is, the sources oftentimes across regimes while we wanted to cross these periodization divide set up, oftentimes demarcated by political regimes. And I think that's important to do because of the logic of the archive and how archives are organized, the registers in which sources speak are kind of different. So for instance, in the Japanese colonial period, I'm able to subject into the mining, the papers of individual mining engineers, and, you know, see the letters, some of the letters they wrote, that's a large literature in the trade journals, but also the engineering journals at that time. In the end those also the company records, which were at both the published and unpublished stuff, which was really useful for getting a texture of how things worked on the ground, and also both texture on the ground, and then medium level sort of aggregate of certain developments and for the nationalist period, it was a bit trickier 'cause a lot of it was at least in regard to Fushun itself, it was basically just purely archival correspondence between these folks who were struggling to take hold of this site and then, really struggle to hold onto it and to soft maintain production in the face of this burgeoning and then

ongoing civil war. And then when it goes into the communist period, that's even a shift in the chapter covers the 1950s, but the early '50s and the late '50s have really different sort of register of what is of what can be said and what is said. So critiques that existed in the early part of the decade were sort of really hard to get to in the same way, aside from these materials, these internally circulated materials like the but yeah, it's still kind of wasn't it always very on the ground. And so each chapter felt like a mix of various sources. And sort of bringing in literary sources was also important for me. And for several reasons, the most interesting one for me was working with Xiao Jun's "Wu Yue de Kuangshan" which was the coal mines in Mei, sort of socialist, realist novel he publishes in the '50s, but was actually based on his experiences there in '48 to '50, and soon after I finished the dissertation, Xiao Jun's diaries were published by Hong Kong University press. And so I was able to read the novel alongside his diaries and then just see how one connects to one really, it was really not a... That was a really fun source to work with, but it required a lot more smoothing around the edges to deal with the different registers of sources, I think. And then maybe the last thing I would say here is about choices of characters to foreground coal mines, at least in China, very masculine spaces. Also, unlike in Japan there was a large workforce, at least in the earlier period of women in the mines. The folks who worked the seams were almost, I mean were exclusively male, but then I wanted to also include women's voices in, as a matter of choice in the narrative, and that's why I foreground people like . And I mean, who also just writes really interesting and provocative things, but to like where do I place her in the chapter? I don't like, bury her in a footnote. She opens up the book and she opens up one of the chapters later on. I use her reflections on the mine to sort of frame, whether the open-pit was a marvel of monstrosity. And I thought she was really useful in that regard or made sure like having the voices of children, but also, of a Chinese boy who survives the Pingdingshan massacre. And this is based on these oral histories that were done in the '50s. Well, this one was in the '80s, but based on some of these earlier records, and then, but also the, Li Hsiang-lan the famous Japanese actress who became famous by the Chinese name and had grown up in Fushun, and sort of juxtaposing that chapter opening with, so a little boy who survived the massacre and this little Japanese girl who's also witnessing it from another perspective, seeing the fires from the mines in the distance. And then only over the years also piecing together the story for herself. So yeah, those were some kind of choices in terms of characters to foreground also.

- Right, right. I think they're a really smart way to do the story. Even if we see our history writing is form of storytelling. I think that really humanizes our academic book. I have just a lots of question very, very quickly. Do you have any regret, anything you have to give up in your research or in your writing process and tell yourself, look, you know, it doesn't belong here. Doesn't belong in as

a book or yeah.

- I mean, to some degree because I took a little bit longer on the book and I mean, COVID came and I had, the university was very generous in affording us these extensions. I think I maybe took a year longer on the book than I would have otherwise. And so I was able to sort of fend off some of those potential regrets. So I at least finished the book on a note, which I didn't hate it. So maybe it was that sweet spot between like having to cut stuff that I would sort of rush through things that I would regret later and then like being so deeply immersed with it for so long, I end up hating the project. So it was manage to send it off and have it now arrive a while I'm still like, very invested in it. But I think definitely there were things that showed up on the cutting ribbon floor. The whole chapter on the nationalist in which, nationals sort of hold Fushun for based for such a short period of time during the Chinese civil war. But then I ended up doing all this research on the nationalist government's relationship to the coal industry, but also the functioning of the nationalist state. And so the chapter then becomes really kind of, I think it's a pretty dense chapter, but I felt that could write a whole book on it after I did, I spent almost an extra year of research just to write that chapter. And most of the stuff I researched were like, are sitting in boxes now that have not made it into the actual sort of tip of the iceberg. So on that front, and then maybe the other one would be, I mean, I didn't do as much research on this front, but I think it's definitely a sort of area that could be expanded. And I just did the really quick and dirty version of it in one section in the fourth chapter, on the Manchukuo years and situating Fushun amidst this coal mining in the Japanese empire more broadly, is that empire of energy, right? How do all the parts connect and what are the concurrent developments in Taiwan, in Karafuto, in North China during that time. So that itself, I think, could almost be a another book, although on this end, I will admit to not having done as much. So additional research didn't make its way in the way that I did with the nationalist chapter.

- So the reason I just wanna quickly explain, the reason I asked this question actually is really try to look into the entire process of your research and for your research and writing. And I think your answer really make me feel, we actually always, how to say that, we always do more than the book needs, right? And then the process of writing tends to be about what to choose and what to give up. And when we talked to each other privately, we always talked about how this is painful process, how to cope with this painful process. So I'm so glad actually, I asked this question and you answer in this really meaningful way. I can see many of our friends are actually now listening to your talk and many of them are still writing their book. And I know some of them are thinking about the same questions, right? So I think your solution makes great sense. You have many other books actually sitting in the boxes, waiting for you. So it's a fabulous way

to think about all these years of work have generate so rich material and so many diverse ideas for the future. So for that, actually, I wanna congratulate you.

- Well, thank you.

- So this is now one book, there're actually at least three books here.

- Yeah, but when I turn to them, it's another question, but at least, you know, stuff sequestering them in boxes make it seem easier to let it go, I guess.

- Right, so now I think, okay, I've been occupying you for too long. Let's turn to our Q and A. So we have actually many meaningful questions waiting for you. So let's just begin with the order, the time order. So how about we go to the first question by Larissa Pitts. She asks approximately how many Japanese engineers remained in China after the war? Did they continue to live in China under communist rule?

- Thank you for that question, Larissa. And thanks for coming to this event. So I think the estimate, and I'm getting this from folks like Tasi Young and from Amy King, there are about 10,000 Japanese engineers and technicians who are left in Manchuria after the war. And they were sort of repatriated in different waves. So there were some who just exclusively worked with the nationalist regime. There was some who worked with the communists who stayed on with the communist and the one person that I write on, I write about most is, and who's actually still really highly regarded in Fushun today. They're referring to, by reading that the Kanji really in the Chinese way of they asked who BeiQun YiFu was it was Kitamura Yoshio he's sort of a local hero. And in part 'cause he stayed on, he actually left about almost a year later than most of the other folks. He repatriated only in 1953 and he was sympathetic to the... Quite sympathetic to the communist cause, he went back right in Japanese leftist journals about how terrible postwar Japan was and how promising it was in socialist China, in comparison, which is in some sense not surprising because many of these engineers at least in Fushun, they were treated much better than their Chinese counterparts. Many of them still lived back in the villas that were built during the colonial period. They had access to many of the amenities, they had better, they had higher work points when work points were introduced and that was anti-inflationary measure that was put in place, especially for, you know, inflation was bad across the country in the postwar period, but especially in Dongbei and so these folks were, I mean, recognized in part for the expertise and treated well as a result. So yeah, so that would be my general account on these Japanese engineers. So I also wanna do a shout out to my friend and colleague, Koji Hirata who writes about this as well in his book on Han Shan. And of course the, the

traditional, the classic for this in Japanese is Matsumoto Toshiro who has a great book on these, that transitional period also from the, sort of late war into the early PRC period and the Japanese engineers who stayed behind then.

- Thank you. Let's move to the next question from Davis Schwartz. Dr. Seow raises the question in my mind, what are the economic links between industrialism and the dependencies upon fossil fuel energy? That is, is there some basic connection between the scarcities of fossil fuels, their exhaustibility and the value of a capital itself?

- Yeah, thank you for joining us, Steven. I love that question in part 'cause it allows me to speak to one of the paradoxes I think is contained within our fossil fuel regime, which is on the one hand, and that has also informed that our, I will add that also informs how we view renewables in the present, which is on the one hand, this kind of deep admiration and extollation, celebration of potential inexhaustibility. So I mean the image that I showed earlier as I was sort reading the introduction was postcard from the early 1930s. And it says, and one of the interesting things over there, it says in the English, the grand site of the open-pit, Fushun, but then in the Japanese, there's a phrase there that is missing in the English translation, it says, "Mugen no hoko" which means the "limitless treasure house." And so this on the one hand, this image of the inexhaustibility of some of these resources on the one hand, and then the persistent fear of scarcity on the other, which became much more pronounced after first World War. I would argue that the first World War was real turning point in conditioning how many states regarded fossil fuels, and resources in general in part because not only were they... And this is another sort of paradox intention, not only were they concerned about present scarcity, but it was also projected future scarcity. So what's the precedent and projected. And I think, you know, the fossil fuel regime is not held together by, and not only in spite of, but by that particular tension between the fear of scarcity and then this belief in limitlessness. And I think it manifest its way most in the kind of silver bullet solutions that are proposed to questions of scarcity. So the shale oil story I tell in which Japan develops its first shale oil industry in Fushun because they have this, the overlaying the coal seams are what this oil shale, which, I mean, from that is from which liquid petroleum could be extracted, but at great costs. But, you know, there was so much hope that was put into this being able to feed a kind of fuel self-sufficient, liquid fuel self-sufficiency for Japan that the Imperial Japanese Navy and Mantetsu was so deeply invested in developing this. And this was also a kind of transnational story because they were drawing upon models and methods in Estonia, in Scotland, in Germany that some deep connections also between Montes and Germany in regard to the work that's being done at the Kaiser Wilhelm Institute in regard to shale oil, but in subsequently also these synthetic petroleum that was a product of coal-liquefaction from liquefying coal

basically. And again, that's so I think this is fundamental to how this particular energy regime has worked, but it also sort of informs how renewables oftentimes regarded in the present, in terms of the potential inexhaustibility of the sun, for instance, the solar, we can't run out of the sun, right? I mean, depend how you look at it, but you know, I think this is really kind of a fundamental productivist logic that is underlying this regime. And it could say a little bit more about its relationship to capitalism maybe in, maybe I'll do that in... If that's a subsequent question that would allow me to flex lyrical on that point, but thank you for that question, David.

- Thank you, Victor. I would like to interrupt here a little bit since you talked about a renewable energy and dealing with these terminologies, and their developmental nature. So for someone like me works on water issue and also our many of our common colleagues working on the issue of trees and forests, and the wood, and the kind of a question sometimes, or let's say, we sometimes get some pushbacks by people saying, "Look, water is renewable resource or trees can be replanted, so what? Give 'em time things will come back." So it's really interesting logic that you are talking here. Okay, let's go to next question by Steve Harrow. So Steve says, Victor, you are working on a succeeding book on the more recent history, fossil fuel energy in China. Great, can you give us a sneak preview of the content and argument?

- Oh, actually Steve, not yet. I have been sort of committed to it, but I mean, I'm interested and I still false- I mean, in part because of just what's going on in the world, around us and on the planetary level, I still follow the developments in the fossil fuel industry in China with great interests. Especially, I mean, the kind of logics that we were just critiquing, both Ling and I, but also, the new technologies with gridification of renewables and the exporting of these particular ideals along the BRI and take the Belt and Road Initiative, and such. But my next book project's actually slightly different. I tell people when I start the elevator pitch version of what I do, like, I'm a historian of energy, but I'm also a historian of work. And so the next book is on the history of work and on how does work become an object of scientific inquiry, and how do these larger social discourses about what work is, what labor is, intersect with the sciences of work. And so I tell it through the story of industrial psychology in China from the 1930s of present from, this managerial form through labor psychology in the socialist period into something that reemerges and is viewed as valuable in the new social, in the new capitalist economy or the new Chinese economy with socialism of Chinese characteristics, whereby industrial organizational psychology is brought into the business schools that emerge in the '80s and beyond. But yeah, that is my kind of the next thing for now, but definitely excited to talk more about fossil fuel related issues.

- Right, continue wearing your two hats or maybe you'll develop more because I know you are talking about environmental histories, at least you should speak to those of us who will ask you to contribute to the fielding environmental history. So three hats now.

- Definitely.

- So thank you, Steve. Let's move to the next question from Michael O. Grant. So if I pronounce your name wrongly, I'm sorry. So thank you, Professor Seow for a really engaging talk. I'm curious about the next chapter in the environmental and energy histories of a places like Fushun, does the Fushun or Liaoning province play a special role in a growth of renewable energy sources in China? Are there other extractive industries that produce materials used in such as solar panels or wind turbines, how much renewable energy is generated in this historically co-oriented region? So Michael, yes. And it works on comparative literature at Harvard.

- Well, thank you so much for the question, Michael. So the short answer is that there's... This is not one of the major sites for either the development of renewable technologies or the extraction of the various resources that are necessary for it. It still remains one of the largest shale oil producers so, I mean, it's not liquid petroleum, and it's definitely not renewable, but it's sort of the best shale oil production in China, and that still persists into the present. I'd be interested in regard to, so one of the things I mentioned in the epilogue is this emergence of what I mean, I see as a ghost city, but maybe within a couple of years, we'll see or how it made, or may not turn around, but between Shenyang and Fushun, this Shenfu district, which has, I mean, I was so astound- I mean, I describe it in the book by like drive through, or on bus going through on the Lei Fung Hao, the Lei Fung bus going through, and it's sort of largely unoccupied and this massive iron ring that, I mean, to me, kind of recalled the arch in St. Louis, but that has in on the Chinese blogosphere, been laughed at as some kind of portal to some alien dimension. But one of the things that I think may be interesting there is that they've been trying to cultivate this site for various startups. And I mean, renewable startups, maybe also a possibility here. And it was starting to pick up a little bit more just before the pandemic, but then I mean, it doesn't seem to have been somewhat stalled since, early 2000, early 2000s, I'm losing track of time early 2020, yeah. But thank you, Michael.

- I wanna quickly remind our audience that actually your book, the epilogue, even though we tend to think epilogue as a fairly short, but actually in epilogue, you offered a fairly substantial discussion of the past 20 years of Fushun. And also the fossil fuel industry both in Japan and China. So it's a substantial chapter, I highly recommend people who interested in contemporary recently issue to look into that chapter. So wonderful. So let's go to, uh, Professor Hai Yuan's

question. Thank you for your wonderful presentation. I look forward to reading your book. If possible and appropriate, could you discuss how your work engages with the scholarship on the Anthropocene? Great. Time to talk about the big concept.

- Thank you so much for coming to this talk and for this question about the Anthropocene. So, I mean, I acknowledge that climate change is only one aspect of the Anthropocene and what we witness as these planetary changes, that encompass also biodiversity laws to the depletion of our hydrosphere, which lay us way, way more prepared and qualified to talk about with that, especially the hydrosphere. But I think one of the things that I wanted to foreground here was the... So the theme of these fossil fuel machineries and the imagination of sort of landscape transformation, but also relief from work that comes along with it. And I think it also precipitates many of these other developments. So while, it's the burning of coal and oil to power these new machines would be sub directly related to kind of climate change concerns. The sort of the mechanized world that it also enables has its fingers and all these other kind of pots as well that have sort of shaken this particular consideration. And I think in regard to another aspect of the Anthropocene that I wanted to sort of foreground here is I made this comment a couple of times before, but was very informal the way it said, but as historians, we sometimes regard it as we have camps of splitters and lumpers, right? You have the splitters who like, Oh, this phenomenon's actually really much more complex than you think I'm gonna like really complicate it. And then the folks who like try to show connections where they may not lump things together a little bit more in ways that they may not have been lumped before. And I think, it is the one trying to do is lumping, and I'm trying to show this kind of common denominator across multiple political regimes that are in which fossil fuel developmentalism was embraced. And so Japanese, they have kind of two variants of a fascistic regime, the Japanese Imperial, but also the Chinese nationalists. And then you have the Chinese communists and I do this, I mean, in response to like folks in, let's say, modern Chinese history, I sort am more of this allows me to solve be in, I mean, I'm in agreement with the folks who are not only talking about the destitution that Maoism brought to China's environment, that it was just this aberration of the Maoism years, that's persistent to the present, but it's really part of this, I think it gets to this other question that I'll be answering soon about modernization, right? It gets into this larger, ideal about modernization and the one, and that is shared amongst these multiple regimes and how fossil fuel industrialization was so tied up to these projects of the modern economy and the modern state. And the one thing that I would maybe end with over here is that, sorry, I mean, I critique all these regimes, so I almost feel the most... I almost feel, I sometimes called the socialist state most to, I mean, I sort of take on them a little bit more harshly in part because on the one hand, I almost feel that there was a missed opportunity there as society was really being reimagined in the revolution that at the same

time, and I say this prefacing it, understanding all these larger geopolitical concerns that called for state strength, but it didn't, the model that the adopted didn't move very far away from that late down in the period of industrial capitalism of along 19th century. So much so that, you know, what is regarded as markets of progress or growth, right? This is basket of goods', you know? Coal it's about it's iron. It doesn't matter what the grade of coal was, or that it was emphasize was the late night, or sub two minutes per two minutes. It's just becomes simplified into this numerical aggregate by which states can compete with one another. So I mean, at the height of this, you have that's, what's behind slogans, like "Exceed the UK and catch up to the US," right? we are still gonna use the benchmark that was set in the earlier period of industrial capitalism to determine what our society is deeming as, and I'll state as deeming as important to pursue. And so I think these all feed into these, are all sort of important threats to tie into an Anthropocene story and the benefit of a place like Fushun. I mean, it's not only an East Asia story, but it's one that allows me to tell the story across these multiple regimes that has these different political leanings, but yet it's off coalesced around this particular point.

- Thank you. And I really like how you talk about this is a peculiar, but actually let's say transregional and a transtime Anthropocene storytelling. So this is peculiar storytelling so very important to be, it should be heard. So thank you for your answer. So let's the turn to next question from Professor Xingfan. Thank you for the wonderful conversation and congratulations on the book. Professor Seow, I have a question regarding another theme that is modernization. So yeah, you already saw the question. You mentioned that book has a three major interventions, state effects, Imperial legacies and technology, and on labor. I wonder if out of the three, you have offered any thoughts on the question, the modernization, is it like beating a dead horse that modernization seems to have become out of fashion in the field and in the postmodern society, or is it a strategic choice that you made while writing the book?

- Well, thank you for that question and thanks for coming as well. I mean, I think I regard this as the question of industrial modern, right? And I think we, I mean, even though we talk about post-industrial society, that many of the features of it still persist into our present. And I mean, I see this modernization and so, in regard to modernization and the modern as both not, I mean, I was gonna say it's not evaluated term and the way I... I'm sorry, it's not something that I think its solve one of the same as progress, right? And so modernization is necessarily a desirable thing. And so the critique that levy here is really sort in line with thinking that we are still actually occupying a modern moment in spite of what we say about postmodernism, like materially, the modern world that was sort of brought together that has been assembled both in the material world, and then the expectations of our relationship to including consumption

that way we consume as individuals in occupying this long age has not really, I don't see us as having sort of really departed from that as of yet. So I think in some sense, I see this as a genealogy of our present, but one in which we are still part of that line is of an unbroken lineage into a certain degree. So I think that would be my response to that question of the modern and modernization more broadly.

- May I quickly interrupt? I remember in your epilogue and you mentioned all these energy crisis in the recent years, and even though the Chinese government announced to achieve carbon neutral by what? 2025 or 2050, I don't remember exact dating, but as the energy shortage showed up and the people suffered from a lack of energy supply and the whole society would actually redial and walk backward into the traditional coal-burning fashion. So all of a sudden modernity comes back again, if we use a coal-burning as a benchmark for particular kind of modernity, right? We suddenly fall back to it again. Anyway, thank you. Let's move on the next question from Ximing Wang. Thank you for this wonderful lecture, Professor Seow. I'm a PhD student from Rutgers University who's interested in Energy Humanities and China studies. I wonder to what extent the decline of coal mining business in Northeast China is relevant to the energy transition project such as Three Gorges.

- Yeah, thank you for that question and for coming as well. I think, the decline of coal mining in the Northeast, I mean, and this happened even before coal usage was being dialed back in China. So this was by the late '70s already. And I mean, people in Fushun, especially those involved in the industry would often bemoan the fact, we still have a lot of good coal on the ground, but we were too overzealous in the 1960s and in the early '70s. And so, and what they mean is that there's oftentimes a ratio between what you should dig out and what you should leave behind. And based off, in those moments of further, oftentimes took out more than they should have. And so you have, and without either leaving behind or clearing actually like, you know, clearing debris that would otherwise be, I mean, for the purposes, functionally useless. And so they, instead, they dig the useful coal instead, but this resulted in a lot of tunnel collapses in subterranean spaces. And then with the open-pit mine, the sites collapsing, and this becomes the climax of the story for in Xiao Jun's story, for instance, where you have two workers who are trying to save him, and it's so symbolic the kind of story I'm trying to tell you. You have two workers who are try to save a machine that is half being buried in this rubble, and then more debris collapses onto them again, and then they die. And so I think the main thing I would see, so we have to sort understand definitely the larger energy portfolio in which hydro is also being pursued, but it becomes more of an issue. The decline of coal extraction in the Northeast it's not because of an unwillingness to want to extract coal. And so this and many of the other big mining regions are still sort of operating in, well until

recently in full force. I mean, people in places like Hai yun, where Ling was just there recently.

- Right and I actually wanted to just add one sentence here since I'm writing actually right now about a hydropower plant, which was a build at the end of the '50s. And so I happened to encounter all these material, talking about people debating, should we support the coal fires electricity, electric power plant, or a hydro power plant, and also '50s, you have all these issues, energy shortage, right? So people put up all these slogans saying we need to save up coal for our country, for our nation, . So this seems to be a huge movement at that time. All right, let's turn to another question by Ren-ren Yang. Thanks Professor Seow for the illuminating talk. May I ask in the socialist period who reported on the workers complaint that quote "the call is paid for in human lives" unquote. Was it by the state media? The archived 1954 news piece indicated that the Fushun Mining Bureau is planning to do further inspection, to ensure a safer environment for mining. And I wonder if the socialist state enterprise implemented any specific measures and the regulations in the years to come. Was what workers complain ever noted, reported and discussed by the colonial regime? How did they think about Xiang Ming? I'm just thinking about the political edge of the socialism production and the rhetorical context of the socialist reportage.

- Oh, thank you for that question. And so reading the document closely as well. So as you know, this is a genre of, so this which is, the three main types of publications that Xi Hao puts out, there's generally all, but I mean, everyone reads it. A lot of issues in time. And then you have , which actually gets a lot of the problems 'cause these are problems that need to be solved. And they including, let's say when your workers are dissatisfied with the conditions and talk about and then that's the stuff which I have never read any stuff, which the inner, the high people would read. And so I do treat this source with a little bit more veracity that it has because it's about problem solving ultimately. And but there was one of the interesting things is that this was actually quite widely reported in the newspapers in the early 1950s. And this really changes after '52, '53, but it almost had a sort of great leap forward type of dynamic to it in which the competitions over which subunit within the mines could produce more. And then you had criticisms levied against certain supervisors who sort of drove their workers without observing safety. So the same story, you know? Overproduced beyond the target or reached the target sooner, but then you had all these "Shangwang" that resulted from that. So I think it was a common enough probe that were those mining safety inspections that were carried out continually at these sites. But then that didn't kind of stop the persistence of it. And I mean, not from a labor human cost site of it, a part of it is, it's about and this particular logic also persisted in Japanese safety management in the colonial period. I mean, they're also not interested in having big explosions in the mines, not so much because you have

people dying necessarily, but because you have to pay salaries to, you have to pay sort of compensation, that's certain amount to workers families, but this could also mean the stalling of operations for, let's say, half a year or one year. So for even productivist purposes, there were reasons to take care of safety, but then it didn't stop, all this kind of on the one hand to happen, and then especially around safety equipment. But then on the other hand just blowing past targets and over extraction and overworking, some folks doing multiple shifts, for instance, without rest, which is not celebrated, socialist, I mean, high socialist ideal until it results in injury and death.

- Yeah, I actually read some of these reports from my own work too. It's really interesting to see the publication bearing the large characters, all the accidents. So thank you for your answer. So Victor, if you don't mind, I hope we can extend for a few more minutes, so we can go through the rest two very important questions. So, all right, so the next question comes from our friends, Ren ke. So thanks so much for wonderful introduction to your book and research, Victor, prior to your work, perhaps the mining site in modern China most are familiar to us from some recent books is the Hanyeping and Anyang coal mines, whether as a foundation for late Qing, self-strengthening, a target of Japanese imperialism or a place for building, memorializing revolution, I'm wondering if you could elaborate a little bit more on the differences between the legacy and the significance of a Fushun versus the more interior mines.

- Yeah, thanks so much for also tuning in from Shanghai. I believe that's where you are and right now, and thanks for the question. I mean, I could sort of answer from several angles. I mean, I think in regard to the level of mechanization and open-pit mining and with the exploitation of shale oil in particular Fushun becomes quite distinct, but even amongst, let's say the Guoming Zhengfu as they're thinking about Dongbei, especially toward the end, what would be toward the end of the second World War and thinking of "Jie Shou" sort of take back some of these industries that itself, Fushun becomes emblematic of this particular, I mean, in the way Hanyeping was in previous times, this sort of nexus of coal and iron production. So similarly with Anyang and Fushun, and within that kind of industrial cluster idea, but I mean, maybe one point that I tried to highlight or at least I bring up in the narrative of the book in terms of talking about communist mobilization at this site is contrasting it with the really successful story that Liz Perry tells in Anyuan, which, Anyuan becomes the little Moscow of where, thanks to folks like Liu Shaoqi that they've solved successfully had that struggle of revolutionary struggle there. And in contrast, I mean, that's the colonial setting of Fushun, but there were a lot of kind of roadblocks to successful mobilization, including the successfully plant the Japanese authorities successfully planted moles and spies in these networks. But then was also the unsuccessful kind of market. I was gonna say marketing by messaging and was the way in which the communists had

tried to mobilize people in places like Fushun, they oftentimes centered a really kind of abstract ideas of like imperialism and nationalism, as opposed to the kind of cultural positioning that Liz talks about in Anyuan, that's it was more about the day to day lives of individuals, as opposed to this really kind of "Chouxian" ideals that these were the flyers that the Japanese authorities who would find lying around and then go like, huh, this doesn't seem very successful or the way in which it sort of has this supported the Soviet union, for instance, at a point at which there were all these contests, there's a big tough question about the relationship between, I mean, viewing the social, the USSR as this imperialistic force that was active in Northern Manchuria. I mean, something that Zhang Shiliang gets embroiled in, but so I think one of the things I would say about it is just, I talk about it in comparison with successful versus unsuccessful revolutionary mobilization. That would be one kind of story thread between those two.

- Thank you. All right, let's turn to our last question, which comes from Mia Yu. Mia Yu says, I am a Curator in China together with several Chinese artists. I'm researching about Fushun's coal gangue hill in preparation for a upcoming exhibition. This is excellent, coal gangue, as you know, is a solid waste generated during coal mining and washing the coal gang... Sorry, I don't, my pronunciation's all over the place. My gangue had been accumulated for the past century by Fushun's West open-pit mine and had formed a hill, which currently occupies around 11 kilometers, square kilometers, I suppose. I wonder in your research, if you have encountered any historical materials about how the Japanese had treated the mining waste during the colonial era, this is a fascinating exhibition.

- Yeah, that sounds like a wonderful exhibition. I'd love to hear about. So maybe I'll put my email in the chat also for anyone who wants to reach out and just later to talk about the book or other things like this fascinating exhibition. So in regard to sort of waste that was generated from coal washing in particular, there's this sort of less, I mean that there were these kind of particular dump sites for that in Fushun itself and it sort of marked out accordingly. And that would be the more sort of like combustible waste. There was also, one of the interesting thing is, is that with hydraulic sewage, much of this waste, especially the waste from shale oil production from, and sometimes from the overburden, that is excavated with sent off mixed into a slurry with water and then pumped back into the mines. And basically what they would do is, so this was a development that the Japanese engineers had really undertook in the '20s and '30s, but then that some distinguished Fushun from other places 'cause the coal seams were so thick. Some, when you do subsurface mining, one of the things that had to be observed was leaving pillars of coal behind, if not, the whole tunnel collapses. And so one way to sort of further extract this coal was to solve, you know, after you carve out a room and you put in the pit props according to, and then you finish

excavating the cavity, they boarded it up and they sometimes use like reed mats also something that semipermeable, it allows water to flow out from thereafter. And then they pumped this slurry of mine waste into these rooms to really fill it up and then let the water drain out, and then basically, it's basically like, kind of, I dunno, I'm not sure whether I should say that it's like a variant of like underground, like but it's a kind of packed earth idea, but they used mining waste for this as well. And then what they would do thereafter is they'll be able to sort of mine the areas above and then while they're doing that, they can remove the pit props that they had put in place. It actually saved them some of these, that was a big deforestation issue around the mine sites when they started importing all this, all the wood from Eastern Manchuria into what would be Korea also. But yeah, I'll love to learn more about this exhibition 'cause yeah.

- This sounds fascinating that the exhibition and also your response to it and it's a pity. I think it's a pity that I think Professor Zhang Hai has checked out, but I think your answer directly related to his question about Anthropocene, right? Thinking about the Anthropocene, the geological strata that the Anthropos has been deconstructing and reconstructing. And then now we are talking about this specific strata of the earth being filled with the industrial waste and the water and all the boarding, everything, right? The earth strata being decomposed, and then recomposed with a very different kinds of materials. It's such a fascinating way to think about our current and the future earth. So with this note, I wanna quickly mention, okay, I think David Schwartz mentioned that I might have misread his earlier question. We don't have a time to go back to the question again, but if I misread it I apologize, but I believe Victor, you can see, you saw the question too. So I trust that you saw the question. So with this, and I wanted to thank you Victor, and congratulations on a very insightful and truly well written book. I really enjoyed reading it and I learned so much from it. And the book is richer than actually Victor told us for one thing, for instance, is it beyond 100 years of 20th century? So please read it. It goes on at least into 21st century. And it tap into the big questions we care about such as the economic development of the East Asia, the energy security, energy transition in both China, Japan, and over the world at large. So I highly recommend everyone who care about these issues to check out this book and in the chat room, I think our... Victor, you put down, put up your webpage, and also I'll put down your email. So for those of you, you didn't get a chance to Zoom bomb us, you can email bomb Victor to that's to send him all the question and comments.

- Yeah, no, thank you so much Ling for this session and for just engaging my work, and for your thoughtfulness and all the work that you do also is so, so important. And thank you again to Mark for being the...

- Thank you Mark.

- In this case, faceless force behind this session and to everyone for coming. It really means a lot to me that you are here. So thank you for making the time.

- Thanks all of you for your support. And very quickly before you go, let me remind you on the Earth Day, April 22nd, we will host a talk by Professor Michael Hathaway, Anthropologist from Simon Fraser University in Canada. He will come here to talk to us about his new book, his new research about a Matsutake mushroom and the worlds that Matsutake makes. So please come back and join us to hear about those stories of those world making mushrooms. So thank you again, Victor. Congratulations on the book. I look forward to seeing you in person and to celebrate with you in person.

- Well, thank you, Ling. Safe travels and thank you once again to everyone.

- Thank you, have a good day. Take care.

- Take care.

- Okay, that went really well. I hope...

- Oh, thank you so much, Ling.

- I really appreciate you sharing all these.