

Modern China Lecture Series Featuring Joan Judge – China's Mundane Revolution: Vernacularizing Science and Scientizing the Vernacular in the Long Republic, 1894–1955, November 30, 2021

– [Arunabh] Hello everyone, and welcome to today's lecture. We'll get started momentarily after we give another minute or so to have people log on. We thank you very much for joining us.

– Yeah. I don't wanna mess with anything right now.

– Okay, I think we'll get started. So, hello and good afternoon from Cambridge. Welcome to the final Fairbank Center Modern China lecture of the semester. My name is Arunabh Ghosh, I teach Modern Chinese History here in the History department. I'm also the convener of this lecture series. Our speaker today, is Professor Joan Judge. Professor Judge is Professor of History at York University in Canada. She is a cultural historian of modern China, with a focus on print culture and women's history at the turn of the 20th century. She has published extensively in these areas, including three monographs, several co-edited volumes, and dozens of journal articles and book chapters. Her first book was an analysis of the late Qing era newspaper, *Shibao*. It was titled, "Print and Politics: 'Shibao' and the Culture of Reform in Late Qing China." And it was published by Stanford University Press in 1996. She followed that with another book from Stanford University Press in 2008 titled, "The Precious Raft of History: the Past, the West, and the Woman Question in China," and this book also saw a Chinese translation, which came out in 2011 from "Jiangsu renmin chubanshe". And of course, most recently she's the author of "Republican Lens: Gender, Visuality and Experience in the Early Chinese Periodical Press," which was published by the University of California Press in 2015. Professor Judge is the recipient of numerous prestigious fellowships. She's currently a Guggenheim Fellow, and a member of the Royal Society of Canada. And she has also been a past Fellow of the Institute of Advanced Studies at Princeton. The subject of her talk today, is part of her ongoing book project on cheap print, vernacular daily use knowledge, and common readers in what she defines as the Long Republic. The talk itself is titled, "China's Mundane Revolution: Vernacularizing Science and Scientizing the Vernacular in the Long Republic, 1894 to 1955." Before I hand things over to Joan, just a few words about format. Joan will speak for about 45 minutes. We will then follow that with Q and A of about 30 minutes, finishing at about 5:15 or shortly thereafter. If you have questions, please feel free to use the Q and A function and type them up. You can start typing up during the talk itself. I'll try and make sure that we get to as many of them as possible. Also small request, if you could identify yourself, before you start typing your question, that would be great. But with the additional caveat that we are recording, so if you would choose to stay anonymous, that is, of course, also perfectly fine. So with those logistics aside, Joan, a very warm welcome to you and over to you.

- Thank you so much Arunabh for facilitating this talk. I also wanna thank Mark Grady for the impeccable logistics. And I wanna thank Mark Elliot, who really launched the idea for this talk. We hoped that it would be in person, but alas, that was not possible, but I am really grateful to have this far-flung audience, and to all of you being willing to sit in front of your screens for another hour or so. So, what I want to do today, is to introduce a project that I've been working on for some time in which I hope to have a draft of by the end of the year. So what I'll first do, is outline the broader conceptual framework for the talk; some of the driving questions. And then I'll turn to the details of one particular chapter to give you a sense of the texture of what I'm trying to do and my methodology. And this is an absolutely perfect time, in terms of stage of a project to get feedback. So I really look forward to your questions and comments. This project asserts the historical value of Intellectual Detritus. I consider the books that in age discards as slipshod, the readers it disparages as ignorant, as key components of the broad epistemic terrain from which historical change is actualized. My investigation of what I'm calling China's Mundane Revolution is premised on the notion, that what we currently know about China's iconic 20th century revolutions, does not explain enough. I shift attention from innovation, from new startling, often foreign ideas, to ingenuity. The deft use of available resources, from knowledge "what", by which I mean, intellectual abstract knowledge, to knowledge "how," more practical daily use knowledge. From the momentous to the mundane, hopefully without losing sight completely of the momentous. In so doing, I question the epical nature of China's historic, political, cultural erections, the knowledge regimes that they erected, and the iterations of mass politics that they engendered. So, first of all, what do I mean by a mundane revolution? And I would welcome reactions to this formulation. This is clearly not a revolution that overthrew structures at the top. Rather it is a more subterranean extension and reassembling of what was broadly understood and materially constituted as knowledge. It was not a clamorous shift, but rather a quiet revolution in ways of technically producing, disseminating, and consuming information about how to do critical, if quotidian things. It was not a revolution of purification of ideological clarity, focus, political will, but of new assemblages based on what I am thinking of, as vernacularized science and a scientized vernacular. The revolution secularized and standardized certain longstanding forms of knowledge, while leaving room for historical experience, and a wide berth for wonder. So, this is an expansive understanding of revolution as deep and continuous. The processes it encompasses could be traced back to the publication of compendia for the diffusion of useful knowledge on an unprecedented scale in the 16th century, so the late Ming. These processes, which were dependent in part on the expansion of publishing and literacy, increased exponentially in what I call, the Long Republic. And by this, I mean a certain cultural formation that was not completely coterminous with the Political Republic. Extended from

about 1894 to 1954, with a much later afterlife, which I'll touch on in the conclusion. This period, as you all know, was one of intensive cross-cultural interactions, political volatility, cultural creativity, and the rising authority of newly imported science, kexue. While the dynamism of the Long Republic, enabled the Mundane Revolution, the institutional failures of the era necessitated it. So it was in some ways, a byproduct of repeatedly thwarted, social and political agendas. Successive governments launched a series of anti-opium campaigns over the course of the period, for example, but offered addicts little guidance and support. New technologies were unevenly imported and haphazardly adopted as those electrocuted laying new power lines could attest. A dearth of regulatory bodies left individuals vulnerable to the circulation of counterfeit currency, dangerous medicines and infested tree saplings. Despite these institutional limitations, minimally educated, financially strapped individuals, found ways to navigate the crises, the flux, and the new global openness of the era. This project investigates how. How did understandings of the human body shared by rickshaw pullers and tailors, meet the challenges of new indictions and the introduction of new disease concepts? How did shop apprentices and workers respond to the wonders and the perils of foreign things? How did housewives and office workers adjust to a series of outward looking regimes that expected them to calculate time differently, weight things differently, dress differently and write differently? So, and this is my main question, how did common know-how alter China's Knowledge Culture via the quotidian byways of historic change? How was this knowledge, the foundation of the Mundane Revolution, produced, disseminated, and acquired? To answer these questions, I examine the interactions among three components of China's mundane transformations in the Long Republic. Cheap books as objects, vernacular knowledge as meaning, and common reading as cultural practice. This dynamic interactive thread runs through the projected book, which will be divided into two parts. The first lays out the macro phenomenon of the study: common readers, the commoners' corpus, and how to get a book. The second part includes four micro how-to chapters that examine specific problems faced by particular readers, as entry points into broader realms of knowledge: How to cure an opium addiction, how to avoid an electric shock, how to treat cholera, which is what I will focus on later in the talk, and how to graft a plant. And I am currently in the weeds of the plant chapter at the moment. The cheap how-to books that are my primary source base, constituted a rich material culture. This is apparent in the Corpus of close to 500 compilations in my personal database. Many of them gathered from unofficial collections, secondhand book stores, and minor libraries in East Asia. They include daily use encyclopedias, medical recipe collections, compendia of secret techniques, merchant manuals, letter writing guides, and works on agronomy. I wanna make two key points about these supposedly shoddily produced works, and I will approach them, even though they were often shoddily produced with the same rigor that book historians apply to the study of elite text. First,

they were not produced by the new industrial publishers, the commercial press, Zhenghua, and World Books, but by what I'm calling minjian, literally amid the people, commercial publishers. While the mainstream publishers relied on imported letter press technology from the turn of the century, minjian publishers first made their mark, using more agile with lithographic technology. I traced the histories of a number of the small to mid-size, often transitory publishers that produced these works. I hone in on one, the Guangyi shuju, which was unusually prolific, long lived and disruptive. It was a master of strategic deep discounting, for example, which threw the entire book market into disarray in the 1930s. The second point I want to make about these texts, is their dynamism. Their changing materiality and content over the course of the period. The first to undergo historic transformations, were encyclopedias known as comprehensive compendia of Myriad Treasures, or the Wanbao quanshu. From the 16th century, when these texts were first published, compilers had repeatedly added and deleted material from within the compendia's existing categories. From 1894, which marks the beginning of the Long Republic, publishers began to append a series of supplements to the cortex of established compendia. In adding these supplements, which I found so intriguing that they basically launched me on this project, publishers effectively acknowledged that the existing epistemic structure could no longer hold. The supplemented Wanbao quanshu, continued to be published into the 1920s, but the genre of the daily use compilation, morphed in critical ways. The first key change is the most obvious. Editors shifted the referent in their titles, from the more fanciful Myriad Treasures to the more utilitarian daily use, Riyong. The second change is a more systematic structure. Editors of the riyong works integrated material that had been horizontally and somewhat haphazardly appended to the Wanbao quanshu into new vertical semantic hierarchies. They also added new textual apparatus, illustrations, appendices, and charts. Minjian publishers also gradually added letter press, hardbound, Western style books to their lists while often retaining lithographed inventory, and a preference for soft covers. Most importantly, riyong text compilers made an historic shift in addressing their intended audience. The editors of earlier Myriad Treasures claimed that their texts addressed all four classes of people, including scholars. Compilers of new daily use texts no longer felt compelled to uphold this conceit. In sharp contrast, they explicitly quartered courted ordinary society, putong shehui with books that promised to be useful, ingyong. They insisted their books did not privilege the lofty and profound, but rather used clear and transparent language so that even those with the slight knowledge of characters would be able to read them. At the same time, they recognize the increasing complexity of ordinary society by creating compilations specifically for families or citizens, for merchants or farmers, for women or budding vernacular industrialists. The individuals who consumed these handbooks lived in an age of profound epistemic unsettling. An unsettling that manifests differently in the official and the minjian's fears. Following China's encounter with

imperialist powers and foreign ideas from the mid 19th century, scholars and officials began to prioritize new learning and to valorize what had been deemed lesser technical knowledge in the orthodox Confucian system. They started to think in terms of military hardware and science of technology and germs, of nationalism and utility. While this shift in episteme made way for the new and official and intellectual circles, immaterialized a new assemblages of the old in minjian culture. Minjian editors innovated through recombination and bricolage. They helped their common readers negotiate the shock of new Western knowledge by re-situating existing practical and technical knowledge, Seamlessly merging the local and familiar with the imported and new, they simultaneously printed recipes or tips for the use of candles, kerosene and electricity, all in one section of one text. Or they noted the family in species of a particular plant while continuing to classify it under the more familiar rubrics as flower-like, vine-like, or grass-like. This register of mongrel knowledge, prioritized effectiveness over the abstract value of either new Western disciplines or familiar Chinese techniques. It addressed the needs of common readers who sought knowledge they could act upon rather than accumulate, information they could enter into a bank of know-how rather than process into a conceptual system. These common readers who prioritized efficacy are highly elusive. They read books, but not for a living. They consulted texts, but they didn't ruminate in writing at least about what they read. They sought knowledge, but not of the kind officials and reformers promoted in their ideological campaigns to mold model readers. Over the course of the period, a series of enlightenment movements, all with similar blind spots, sought to successively mold the xinmin, the pingmin, the minzhing, and the dazhong into model readers. Common readers shunned the enlighteners' politicized didactic materials in favor of useful minjian texts. They chose to rent well worn books at street side books stalls rather than read more pristine additions for free in rule-bound public libraries that demanded they sign in, stay quiet and respect strict textual hygiene. Demographically, common readers included a broad range of male and female, urban and rural individuals. Among them, low level office, postal, and railway workers, shop apprentices and secondhand clothing merchants, craftsmen of various kinds, ostenders, factory and manual laborers, housewives and prostitutes, gardeners and flower farmers. Nationally dispersed, they benefited over the course of the period from expanded postal routes, government mail order subsidies. China's subsidies were unparalleled in the world at this time in the early 20th century. And they also benefited from increasingly dense transportation networks. These networks enabled inventories of cheap books to travel from the publishing epicenter of Shanghai to provincial cities and Hinterland villages via boats and trains and peddlers' backs. Most of this national readership was educated informally at home or in locally organized community schools, particularly at the beginning of the period. By its end, growing segments, principally in urban areas attained a formal elementary

school education that rarely extended to, or beyond middle school, and upon which they continued to build once they entered a trade or established a household. Given these often ad hoc and unruly educational trajectories, rates of literacy among common readers are difficult to assess and impossible to capture through the lens of dominant educational expectations. Reams of disparate data that vary dramatically, even within a particular region, complicate rather than clarify the Chinese literacy landscape. Rather than attempt to pin down a definitive number, I take a vernacular literacy approach, questioning how written texts fit into the practices of people's lives, rather than how these practices aligned with educational benchmarks. These practices can be traced in the physical spaces and residual traces of common reading. In terms of spaces, book stalls are key with their distinct sociability and protocols for flipping through, renting and buying books. Traces include hand copied excerpts of texts, reassembled compilations, and various forms of marginalia and evidence of use. Additions, omissions, or corrections merge the reader's knowledge with that of the printed text. The example on the slide is someone endorsing an opium cure that he had successfully used himself. These traces are very fragmentary, however, and they do not offer us coherent reader profiles. I attempt to overcome this problem by combining these fragments with elite and official writings read against the grain, with statements addressed to readers in daily use texts and with disparate traces of commoners, actual commoners. This is the riskiest part of the project. I create composites of common readers and their caregivers out of a range of sources. These sources include archival documents, for example, documents that record the names and occupations of cholera victims in Shanghai, a woman from Jiangzhou, who came to the city to sell cold dishes and fell sick six days later, for example. I used biographies and reports in cultural and historical materials, wenshi ziliao, when accounts of a flower farmer in Chengdu, for example, or the impediments to water sanitation in Suzhou. Feidivair and newspapers, such as Shibao, accounts of experience in periodicals, fictive brothers, sisters, or friends addressed in model letters and epistolary manuals, literature and other materials. Mindful of each individual's specific time and place, I draw what might have been their experience out of that particular context. Hardcore empiricists will most likely consider this kind of extra extrapolation fantastical, while more imaginative scholars will find my accounts overburdened with footnotes. My hope is that the stories will challenge us to look at knowledge, production, and consumption from another angle, by bringing attention to obscure historical individuals, the very real problems they faced, and the texts that they may have turned to to navigate them. And now to one of these problems, cholera. Few Chinese, and most particularly commoners would not have been affected by cholera over the course of the Long Republic. The most spectacular new disease of the 19th century, in the words of the medical historian, Roy Porter, cholera ravaged the globe from the early 1800s, precisely when it entered China. The disease was responsible for six pandemics between 1817 and 1947, and threatened

the Chinese population in 14 major surges in the first 50 years of the 20th century. No year was completely cholera free until 1948. Precise numbers of cases and deaths are difficult to quantify due to the insufficient system of disease reporting in China. Those that have been recorded between 400 and 500,000 deaths nationally at the time of the 1932 outbreak, one of the worst, do not capture the full magnitude of the devastation. Cholera is an unambiguously horrific disease. The Chinese term for the ailment, huoluan, or sudden turmoil characterizes one of its key features, abrupt onset. It is further distinguished by its fearful symptoms, violent spasmodic vomiting and diarrhea, debilitating cramps in stomach and calves, and severe dehydration. All of this bodily trauma gives the sufferer a haunting presence with cavernous eyes, blue and pinched skin, and a raspy voice. Over 50%, and as many as 70% of those who endure the most extreme of these symptoms die within hours or at most, a few days, either of circulatory failure or of acute acidosis with renal failure. I will bracket here much of the linguistic and epidemiological complexity of East Asian understandings of cholera. The question of whether the acute gastrointestinal ailment identified as huoluan as far back as the Han dynasty was the same as the epidemic, cholera, unleashed in the 19th century. This new biomedical entity, which became attached to a specific germ by the end of the century, the vibrio cholerae was named korera by Meiji Japanese authorities, a term translated into Chinese as huoletla in the late 19th century. So the Japanese term can just stand in for the biomedical illness and huoluan still more or less for the longstanding Chinese affliction. In Chinese official and medical documents, The use of either huoluan or huoletla had particular political ramifications at specific moments. Minjian texts named and approached the disease differently. The two terms coexisted in varying configurations within these materials, but compilers often abandoned or ignored them altogether in favor of colloquialisms from the rich Chinese medical lexicon. These colloquial names capture different meanings, manifestations, and etiologies of the illness. They challenge conceptions of diseases as specific objective entities, rather than subjectively experienced symptoms. They relate disease susceptibility to an individual's constitution and their personal lifestyle. They call for symptom based treatment that relied on a panoply of historically proven if continuously updated herbal recipes. Collections of such recipes constitute the oldest and the largest category of Chinese medical works. Their ongoing importance as the cornerstone of minjian therapeutics in the Long Republic underscores the limited contribution of biomedicine to curative medicine in China and beyond China in this period. Before the mid 20th century pharmacological revolution, advances in the eradication of infectious diseases in Britain, the United States, Japan, had less to do with medical breakthroughs than with a political commitment to urban improvements in public health. This was not something China's common readers could rely on, going back to the problem of infrastructure in this period. Concrete data, which is highly limited, reveals the extent to which professional care was sparse and unregulated in

Republican China. To give just two examples, in 1941, Japanese investigative report estimates that there were 59 doctors per a 100,000 residents in well-developed Jiangsu province, 17 in equally prosperous Zhejiang, 12 in Hubei, eight in Shandong, and three in Anhui and Shuanxi. As late as 1947, only six provincial level infectious disease institutes had been established in the country. Given these insufficiencies to say nothing of the dearth of trustworthy doctors and the largely unregulated pharmaceutical market, minjian daily use texts were a critical resource for the myriad of individuals who were responsible for their own medical care. These works were more usable than treatises written by Chinese proponents of Western medicine. And they were more practical than many of the daily use texts put out by mainstream publishers like the commercial press. Both of these genres, the expert treatise and the mainstream text were generally more attentive to foreign prototypes than they were to local experience. This is not to say that minjian compilers did not rely on foreign material. The key to understanding vernacular knowledge, culture is not that compilers poached, they did nothing but poach, from translations of Japanese regulations, from American essays, from age old formularies, from mainstream Chinese print media. What is critical is how they reassembled what they poached into new combinations designed to serve the needs of their imagined readers. I will give three examples. The first is the multiple mutations of one of the most widely used and frequently reproduced recipe collections in the Long Republic, the one that is on the screen, the yanfang xinbian. First compiled in 1846, the Proven Prescriptions, as will I refer to it, was reprinted more than 100 times over the next century, so up through the end of the Republic. Its repertoire of recipes did not remain static. However, as both the text itself and its prescriptions underwent manifold transformations. First editors of various media, including daily use compilations, medical texts, and small newspapers took selections from the original repertoire of recipes and reprinted them under increasingly systematized and standardized categories. Publishers also scientized later editions of the original text, excising apotropaic content, omitting the most rustic cures, and dropping the fantastic stories underlying the therapeutic value of certain recipes. They also created new compilations, still calling them, you know, under the same sort of title of Proven Prescriptions, but new compilations that combined longstanding and newly scientized Chinese recipes with Western prescriptions, creating a new vernacular brand of Sino-Western medicine. While the vernacular Proven Prescriptions was scientized, new scientific information was vernacularized in daily use texts. This is evident in the way the compiler of the 1919 Wanshi changsi, adapted material from a 1912 Shibao discussion of cholera prevention, written by Hou Guangdi, a member of one of the earliest organizations to introduce knowledge of Western medicine to the Chinese community. The compiler adjusted Hou's language register to adopt a more vernacular style. He omitted socially condescending passages, such as Hou's identification of cholera victims, with illiterate and unhygienic rickshaw pullers from



Jiangbei. He excluded Hou's detailed discussion of the vibrio cholerae and its discovery. He did not repeat the reference to chloridine written in English in the Xinbao text. And he altered Hou's advice to call a doctor to examine a suffering patient. This was something that a common reader could certainly not afford, instructing them instead to go to the hospital. A third example of these processes of vernacularization and scientization is the ways minjian compilers recycled a series of 12 individual preventative measures that the same Hou Guangdi had published both in a 1905 treatise, and again, in his 1912 Xinbao article. In the absence of reliable public health policies, editors of vernacular texts had come to understand that such preventative measures were critical to guarding against the spread of contagious disease. They used Hou's series of 12 individual prophylaxis as a template for their own lists of between eight and 12 items, from the 1910s through well into the 1930s, making significant additions and emissions. Through the mid 1920s, items in the successive lists fell under three broad categories that resonate both with longstanding Chinese notions of contagion and with new understandings of the vectors of cholera. So they'd be under the rubrics of the prevention of qi depletion, which would make the body more susceptible to disease, attentiveness to food hygiene, as contaminated food and drink were a prime vector of cholera and vigilance about contagion. Compilers made minor changes to the list in the first decades minor, but revealing. From the late 1920s, they made more significant changes by adding new positive admonitions to Hou's list of prohibitions. Most dramatically in 1934, the editor of a minjian collection reconfigured the list by putting early vaccination as number one. We can read these changes to Hou's original list in a number of ways. They do mark a certain progression away from understanding illness as moral or emotional disequilibrium, caused by sex, panic, or a cold stomach, and towards a heightened awareness of methods for evading, avoiding contagion and biomedical fixes for preempting it. Such progression is indeed part of the story of unfolding notions of huoluan over the course of the Long Republic. At the same time, however, this focus on new and foreign elements masks the messy assemblages of new knowledge and accepted wisdom that constitute the revised lists. Viewed in their totality, these amended collections of measures highlight the extent to which Chinese medicine accommodated rather than collapsed in the face of the biomedical challenge. New techniques were added to the list, but they did not replace older items. A key question the chapter poses is how this process of accommodation may have been lived. It focuses, as does the manuscript more broadly, on what common readers knew, rather than what they did not know. It shifts the perspective from foreign trained cholera experts, including Hou Guangdi, who we've already talked about. Ding Fubao and Wu Liande, whose focus on global knowledge, led them to condemn local ignorance. These condemnations obscure the ongoing efficacy of ancient Chinese therapeutics in fighting infectious diseases in the period before, and even after the pharmacological revolution. Based on the same principles as early

vaccine therapies, these vernacular methods focus on strengthening the natural resistance of the human body to fight illness. Wu Liande notes, but does not attempt to explain the efficacy of such approaches in documenting what he found, the remarkable difference in the mortality rate between Chinese and foreigners in Shanghai in one 1932 study. 7.4% mortality among Chinese and almost four times this higher rate, 26.6% among foreigners. And the foreigners, of course, lived under more hygienic conditions with better access to healthcare. And there are other similar examples. It is not this latent scientific value that makes vernacular therapeutics worthy of investigation, however. These healing methods merit our attention because minjian compilers and their readers believed in them. For workers, housewives, blacksmiths, and cloth merchants, the Proven Prescriptions, bodily manipulations, and chemical mixes that constituted the vernacular healing repertoire were historical truths. They possessed an intrinsic logic that accorded with common readers, empirical standards of verification and their pluralistic understanding of disease manifestation and treatment. As the extensive circulation of Hou Guangdi's 12 preventative measures, attest this vernacular repertoire and by extension, these historical truths, were porous. Minjian compilations were not hermetically separate in either form or content from the mainstream text they drew from and vernacularized. Nor were they rigidly familiar to the tested centuries old prescriptions they re-contextualized and even scientized. The stories of the health seeking behavior of common readers are integral to the broader history of the era, to the unfolding social meanings of illness and the material circuits of knowledge in the Long Republic. I will now introduce you to a handful of these composite common readers. Zhang Er, a migrant worker from Subei was doubled over with stomach pain in early August, 1907. As he toured Lang street car tracks for a foreign electric construction company in Shanghai's international concession, he felt the dizzy need to vomit, but could not vomit. He felt the urge to evacuate his bowels, but could not evacuate his bowels. When he glanced at his hands, he didn't recognize his fingers. The cuticles of his nails had turned purple. His breath was short. His flesh seemed to have shrunk and his hands and feet were cold despite the intense summer heat. His voice was feeble and his mouth dry as he tried to explain to an alarmed coworker what he was feeling. The coworker realized Zhang must have fallen victim to twisting of the intestines infection, or jiaochansha, a colloquial name for a devastating form of huoluan, dry huoluan or dry cholera. He did not even consider taking Zhang to a hospital. This was not a practice that his demographic would've engaged in at this time. Instead, he began to quickly gather the simple ingredients for a longstanding salt cure that he knew would ease the agony. He was relieved when he found a version of the recipe in the head workman's copy of the Myriad Treasures. In the section, I then discuss, Shanghai is the epicenter of the disease. Laborers, such as Zhang Er who were the archetypical huoluan victims and the cure that Zhang's coworker took from the Myriad Treasures, the wisdom of using salt, as if you all know saline injections are the only way you

can really halt the progression of a cholera infection and the controversy surrounding the use of a young boy's urine. Three months pregnant, the domestic worker Tan Shi, had grown accustomed to feeling off these last few weeks. The vomiting was not surprising, but she was alarmed when it became copious, watery, and accompanied by diarrhea of similar consistency and urgency. Even more jarring and debilitating, however, were the cramps in the muscles of her extremities, particularly the calves of her legs. She told her husband, it felt as if a hundred thousand people were pulling at her muscles. This was the way one young woman, cholera survivor, described her symptoms in a magazine article. As Tan Shi spoke these words, she started to realize she must be suffering from diaojiaosha, cramped calf, muscle disease, another name for huoluan, which attacks suddenly and often in her native Guangzhou during the hot summer months. The term was widely used in the daily use text she turned to in managing her family's health. In this section, I go on to discuss the particular dangers that pregnant woman faced when they contracted cholera, specific cures that addressed pregnant woman who had cholera, and a number of circulated in and out of different media. And I also talk about this circulation in and out of periodicals in this section on Tan Shi. The Western gasoline vessel that head boatman Yuan managed was moved along the Huangpu River in late 1921, when he collapsed. It was two years after the devastating 1919 cholera outbreak that had affected some 20,000 people in Shanghai and spread beyond the city as far south, as Fuzhou, as far north as Harbin. Even in the quieter cholera years, such as 1921, the disease did not leave the people of Shanghai alone. Those like Yuan who worked close to the water were always among the prime victims and suspects of its transmission. The daily toil of boatman, barge, polers, dock workers, and water crews ensured that they were in constant contact with the key vector of the disease, water. The medium that had transported the pandemic to China's shores and the fertile home of the vibrio cholerae. In the section, I then discuss one of the symptoms of severe dehydration, loss of skin elasticity, which made hands look like shriveled snails, and gave another colloquial name to the illness, bieluosha. I discuss water as a vector of disease. The problem of infected whales in China at this time and the paucity of clean water sources. And I also discuss the text that the boatman's wife used in her efforts to help him. The laborer Qian Qiyong followed the superstitious masses. Again, quoting from the magazine article. He believed, as did countless others, who lived in mortal fear of epidemics in the non-medical causes of illness, provoked by sins, unleashed by devil's ghosts and demons, huoluan was, in Qian's mind, a disaster that descended from heaven. And I then discuss belief in the epidemic, demon in some communities in the Long Republic, the cure that Qian finally agreed to try when his wife fell deathly ill, a common cure called 10 drops. There were many, many different recipes for it. And it is actually still in use today. By the summer of 1932, 28 year old Gao Si had been pulling a rickshaw in Taiyun, Shanxi for over a decade. He was strong and lean and hard working. He had seen fellow pullers faint on the street from

heat exhaustion or illness, but never missed a day of work himself. He followed his boss Lao Li's rules. He didn't overindulge in drink or gambling. He kept his rickshaw clean and he refused to transport anyone he suspected of suffering from lethal illnesses, like the tiger epidemic, another colloquial name for huoluan. But 1932 was a year like no other. China was rancid with cholera, according to an article published in Time Magazine. The disease started in Guangzhou in March and traveled northward, ultimately invading 23 provinces and 312 large cities by July, when it reached Shanxi. I then go on to discuss the 1932 outbreak and go into detail about the Proven Prescriptions as a text and the particular cure that Gao's boss used to treat him. And this was not an herbal cure but a method of pricking the sinews or certain veins on the back of the knees and on the back. And this was rarely appropriated into other texts. This one stayed within the Proven Prescriptions as such. Shi Anqing, a cloth dealer from Jinzhutian, a village in southwest Yunnan province, was profligate, a licentious drinker by local reputation. His native Jinzhutian had been relatively isolated before the Burma Road ran near it and became a conduit for disease. In the late spring of 1942, a cholera epidemic that festered along the route ravaged all of Yunnan province. The devastation in Jinzhutian was particularly acute. In one month, 200 of Shi's 8,000 fellow villagers, one in 40 were dead. The price of coffins, a quotidian metric of fatalities, rose six times. Neither Shi's beleaguered wife, nor any of his neighbors were surprised he was among the first to become ill with the disease. I then discuss the association of licentious behavior and disease in Chinese medical thinking and the rustic cures that Shi's wife attempts to use to help her husband. He was vomiting so profusely that she turned to non-medicinal recipes, non-medicinal therapies. One specifically for stomach pain and muscle cramps advises the male patient to pull his young member up with his hand and the female patient to use her hands to pull her breast to both sides. The method fails. When Shi Anqing, dies his fellow cloth dealers finally succumb to pressure from the head of the subject's district to get inoculated in 1942. I discussed the limited availability of vaccines due to ongoing problems related to production, supply, distribution, dosage, and corrupted serums, and vaccine hesitancy and issue we have all become familiar with. For these various reasons, only 3% of the population of Shi's native Yunnan had been vaccinated in 1942, despite the province's concerted inoculation drive. And by 1949, less than 1% of the capital city's population, Nanjing, was vaccinated. Vaccination numbers were extremely low in China at this time. Zhou Jiuling, blacksmith in Hangzhou fell ill with huoluan despite having followed his wife's health precautions. He avoided cold, raw food and only drank tap water. There was another smithy next to his where the apprentices were not nearly as careful, however. Out of the 26 people who worked in one of the two shops, seven had already contracted diarrhea. I then discuss how Zhou's wife tries to treat him using medical sections in her recently acquired encyclopedia for daily life. The text combines specific kinds of Chinese and Western medical knowledge rather than

simply juxtapose the two medical modalities, it integrates them in what was emerging as a new vernacular Zhong–Xi approach to healing. This brand of integrated Sino–Western medicine was an offshoot of the movement to scientize Chinese medicine, which had been precipitated by Western medical practitioners' assault on the Chinese medical tradition in the late 1920s. One of the proponents of this movement and the compiler of a scientized collection of Chinese recipes, which I also highlight in this section, a man by the name of Zhu Renkang, sought to reinvent Chinese medicine by reconciling two seemingly contradictory objectives, assimilating biomedical knowledge into Chinese therapeutics while safeguarding the authenticity of Chinese medicine. The ultimate purpose of reforming Chinese medicine, Zhu insisted, was to relieve suffering. Authors and compilers such as Zhu Renkang were translators and assemblers of usable knowledge. Usable knowledge all about huoluan. They did not innovate rather they amass the wisdom of the ancients, the expertise of foreign trained doctors, and the directives of national medical authorities in varying configurations over time. They did not speak to a global audience of experts. Rather, they were beholden to their local readers, to the practical needs of their potential consumers. Just as a vernacular approach to healing was patient driven and grounded in the experience of the sufferer, the vernacular approach to daily knowledge was reader driven and grounded in the exigencies of the user. Vernacular healing was symptom based. The new biomedical verities did not displace the understanding that individual bodies reacted to disease in different ways. Vernacular knowledge was similarly evidence based. What was laboratory tested did not displace what had been historically tested. New specific disease names did not efface the personal agony of twisted intestines, shriveled snails, or muscles pulled a 100,000 ways. For the likes of Zhou's wife, Gao Si, and Tan Shi, cures could be an amalgam of the familiar and the current, the long trusted and the newly tested, as long as they were accessible, practical, and efficacious. After a 30 year hiatus, the register of knowledge apparent in these distant efforts to manage the devastating epidemic has recovered its power to disrupt. Effectively extending the Long Republic into the Post–Mao era. Beginning in the 1980s, a number of the minjian works, including many used in this study, have been reissued. This reprint fever was part of a broader Republican fever, fervent nostalgia for the vibrant and pluralistic pre–1949 period. Threatened by this fracturing of the narrative of the PRC's inexorable historical ascent, the current Xi Jinping regime has forbidden scholars and citizens from favorably evaluating the Republic. It has thus attempted to foreclose questions this study seeks to address. What was lost when the Republic was overthrown? What has been sacrificed on the altar of political unity? What can the Long Republic's cheap print editions, its heterogeneous brand of knowledge and its inquiring readers teach us about the vagaries and failures of China's iconic 20th century revolutions? Thank you.

– Great. Thank you so much. That was, that was really fascinating. The

floor is now open. So please use the Q and A function to ask your questions. And while I think the questions come in, perhaps I could ask just a sort of framing type question and ask you to speak a little bit more, perhaps, Joan, about your use of the sort of the time period, which is sort of starting in 1894 and taking it past 1949 to 1955. So perhaps just a little bit more about how you're thinking of this and why those specific dates, and what they're doing for your larger project.

- I really see that the sort of shift to a broader dissemination of the kind of knowledge that I think is sort of at the root of the Mundane Revolution, that it starts to appear in 1894. Like I said, the supplements to the, to the Wanbao quanshu were just, you know, fascinating because these texts have been published in the late Ming, in vast numbers of additions. There were, you know, we don't even know, but, you know, about 16 to 20 of them have been very well documented. And over the course of the Qing, the number and the variety was greatly diminished until by the end of the Qing, we really only had one particular edition that was still published. And so it really seemed they were on the wane and the Wanbao quanshu were also getting shorter from 30 duan to 20 duan. So it seems to be a dying genre. And then in 1894, you have this influx of new energy and you have four supplements added in 1994, and then early in the 20th century, a fifth and then a sixth. And they're all on very topical kinds of things. Like, how do you cure an opium addiction? How do you treat dry cholera? A lot of merchant information. So that's sort of my beginning point. And then the end point is that the publishers these minjian publishers, who I'm, which I'm interested in, and which I think really helped to, you know, produce the knowledge that was at the, at the base of this register of information and thinking, they continued to publish into the early years of the PRC before the big publishing conglomerates took over, and they had to be absorbed into these new cooperatives. Publishing cooperatives. So, you know, in the early years of the 1950s, it's still not 100% a shift in terms of thinking about many of these issues. There is still a lot of room for these low level publishers. So that's why I sort of extend a little bit in both directions.

- Great. Thanks. Yeah, no, I mean, for the fifties, as you were speaking, I was thinking, of course, of Wang Fei-Hsian's work and Jen 's work too, who I think precise, the document precisely the sort of dynamic moment, even into the early fifties, not dynamic moment, I guess the, the diversity of public publishing, that's still very much a feature of the early fifties.

- Yes. And Rob Kelp has also written about this in terms of the commercial press. And we actually did a panel about this last year at AAS, too, on the 1950s as a very unsettled decade when a lot of really interesting things were going on.

- Great. So we have a bunch of questions, maybe I'll, we probably take them one at a time. So the first one is from Coraline Jorte from Oxford University who says, thank you so much for this fascinating talk. I particularly enjoyed your point about marginalia. Could you perhaps tell us more about how you've worked with marginalia for this project? In particular, in dealing with them often being difficult to date. I was also wondering if you found marginalia pointing to a specific common knowledge reader being used by successive generations of readers. And if so, if different generations used it in different ways.

- Thank you.

- Those are some questions, I guess.

- Coraline, thank you so much for coming. So marginalia is one of the richest sources and also one of the hardest to use for some of the reasons that you have already raised. First of all, getting your hands on texts that actually have the marginalia because libraries like to collect clean texts. So, you know, what I've done in this project is collected from a lot of less orthodox collections in order to see, you know, volume, you know, volumes that really show signs of use. In terms of dating. Yes, it is a problem, but, you know, one thing we can use is even looking at the medium in which the marginalia was written, for example, you know, if it was a ballpoint pen and then if we can, you know, think about when ballpoint pens were more widely used. Another way of dating is sometimes what the marginality of themselves say. I've got one text, which is one of these texts of secret trips, and then tips, and somebody added information about a particular kind of Mackintosh raincoat. And so, you know, you can date, when did the Mackintosh raincoat come in, and that can give you a sense of how to date the comment, if not the, yeah, to date the comment, if not the reader. And sometimes these texts are also covered by something that gives you a sense of the dating, which again, doesn't necessarily link it right to the marginalia. But if it's been encased in a newspaper from a particular moment, that is obviously something that helps, or if you can even get a sense of the kind of paper that was used, because quite often, these people really personalized, even these, you know, low level sorts of books and would often write, and this is another form of marginalia. They would write if it's a multi volume work, sort of a summary of what was in that volume. And they would also quite often cover them with even my very crappy first slide showed an old text that had been, you know, had been cloth bound in a certain way. So really hard, Coraline, to answer your question with any precision, but those are some of the clues I've tried to use. And as for later readers using the marginalia, would love to know if that happened, but have no direct evidence of it myself.

- Thank you. We have another question from Zuoye Wong from Cal State Pomona, who says, thanks for a great talk. His question is, in your

study of vernacular science, have you considered efforts by professional scientists to reach the public such as the science societies? So he says, kexue and then kexue huabao.

- No I don't, but I'll make a plug for my grad student, Noah Nackmias, who is about to finish her PhD dissertation on kexue huabao. I see that more as sort of a top down mode of popularization. So I am not looking at the people who are scientists and who are then bringing it to the public. I am looking at people who really don't know a lot about science themselves, but who are looking at what the local problems and the pressing problems are, and trying to find information that can help people deal with it. So it's a very different trajectory from the popularization, you know, something that's a very popular sort of field of science studies now. Much has been done of one of my colleagues at York, Bernie Lightman's written a lot on it on the Victorian period, but I see what I'm looking at as a, as a different impulse coming from a different direction, You know, not that there isn't overlap and not that there isn't a tremendous amount for, you know, the two sides to learn from each other, but it's, it's a different, a different problematic.

- Yeah. And in addition to learning, I think one, one might also expect to see actually a lot of consternation from the, the professionals that what they're doing is being in some ways misunderstood or abused to, you know, to the detriment of, of public health and, and the good of society and things like that.

- Yes.

- So you're putting with sort of, kind of modernizing impulse.

- Yes.

- So we have a question from Elena Valusi who says really interesting lecture and project. I'm interested in regional variation. Was there regional variation, both in the manner of the publishing and in the content of these literature or magazines or in the way they were used? So are publishers different in Shanghai or Chengdu? Are concerns different? For example, in the questions that you ask about cholera or even plant grafting, are regional variations available for you to consider? Most of your information and case studies seem to be from coastal areas of Jiangsu. So I wonder, and then she asked if this is perhaps a problem of just the availability of sources.

- Excellent question. This was certainly a very Shanghai centric publishing time, but one of the things that I wanna emphasize in the project is that books were getting out of Shanghai. And so I talked a bit in the talk about how transportation was facilitating this, these book catalogs, book catalogs for these publishers, for example, the Guangyi shuju, which I've worked on the most intensively had extensive



instructions about how to mail order a book. And, you know, that leads you to believe that a lot of people were mail ordering books. And other kinds of evidence, for example, a book stall survey that was done in Kaifeng. Many of the books, actually about 50% of the books in the sort of general, the field of general knowledge were Guangyi shuju books. So it really seems, and all of the main publishers, and again, we've learned this from the work of people like Rob Kelp, who've worked on the big industrial publishers. They all had branches. They all had like 32 branches. And even these more fledging publishers, like the ones that I'm focused on, had branches and they had ways of getting their books out. So I don't think there was a lot of local publication of these kinds of materials. We've always seen, you know, as Cynthia Brokaw's work has shown us for the earlier period that there were always sort of publishing centers. And then it's a question, you know, of how the works moved from there. There definitely would've been differences in the way these many problems that I'm dealing with were, you know, were dealt with on the ground. And I try to bring that in by, again, doing a lot of ancillary reading, for example, about grafting plants in the north. There were a couple of really good surveys that were done that talked about the particularities of plant grafting, fruit tree grafting in Shandong. And then I try to see how relevant the texts that, you know, were not produced there, but would've gotten there would've been to those local kinds of problems and it seems that they really would've been. So hard to give a really clearly differentiated regional picture. And it's something that we certainly really need. And maybe if we could do more work in local archives, which I really didn't do for this project, if we could, you know, sort of get an army of us and focus on different areas and see, you know, we could sort of add more regional dimensions. But I guess my key points would be that these books were traveling far out of Shanghai. And that I am trying in looking at how they were used to look at local conditions, in terms of, you know, what was needed and what might have been relevant knowledge.

- Great. Thank you. A slight change of pace to ask you a little bit more about methodology, I guess. This is a question from Gail Hershader, who says she would love to hear more about the creation of historically composite figures. For instance, specifically for the ones you used in this talk, what kinds of sources did you draw upon and where do you feel you are on the most or least solid ground?

- So the, so hi, Gail. The sources that I drew from, I sort of outlined them at one point in the talk from archives, archival documents, which quite often give, you know, some kind of personal detail, also from reports in newspapers, you know, either Xiaobao or Xinbao. So for the ones that I specifically talked about today, they came from one of them came from wenshi ziliao. One of them came from a newspaper report. My man who believed in ghosts and demons being the cause of cholera, there was an actual report with a laborer with that name. And it was really a report about how, you know, he was so stupid

and he turned down medicine, but anyway, I turned him into one of my individuals. Tan Shi, I basically made up, but I saw so much information about pregnant woman, that this was clearly, you know, a serious issue. And I could, you know, locate sort of the problem of cholera, that particular manifestation of it in Guangzhou. So it's a hodgepodge of, and quite often, one individual will be the result of a composite of text from an archive, a Xiaobao and maybe a wenshi ziliao. So rarely do I get one person. It's wonderful when I can, but quite often, you know, I'm putting things together and creating what are truly composites.

- Thank you. We have a couple of questions that I think sort of speak to each other, so maybe I can ask them together. They have to do with sort of thinking about genres of materials or genres of writing and publication. So the first of those questions is from Shellen Wu, who says, thank you for a fascinating presentation. Could you speak a little more about the overlap between old and new genres of publications from the late Qing to the Republican period? So for example, with local gazetteers and the biographies of those involved with these knowledge compilations, so do they, do they sort of find a place in your work? And then a related question that that is sort of more comparative with Europe and North America, this is from Amit Neifeld, who says, during the period you investigated in your research in Europe and in North America, serials were very common. So do you see serials also as a, as a feature of this period in, in Chinese history of serial publications?

- So not periodicals, but serial publications of, okay. Okay. Not so much. So the ways that you really see the combination of old and new knowledge in these texts is through the appropriation of parts of older texts into new texts. Sometimes this is very foregrounded and, you know, people will say, you know, as it appeared in, the Mirror of Flower, so Huajing, for example, this is a method you can use to graph your plants. Or they will say, you know, quoting this particular medical text, and then they put that together with newer kinds of knowledge. So you either have attributed old knowledge or unattributed old knowledge. Quite often, you will have in the preface to these texts, these declarations that this text is new, that the old books like the Wanbao quanshu were garbage, they were poorly produced. They had nothing worthwhile in them. What we have in this book is new and, you know, cutting edge and scientific and half of the material will be from texts like the Wanbao quanshu. So you really have to look closely, you know, beyond what, how they're naming themselves to see what the combination of what the assemblage of knowledge is in, in the text themselves. So, you know, I think you would've had like new texts and old texts beside each other in bookstores, not in, not in book stalls so much. But what I'm really looking at here is the way the two were melded within texts themselves. In terms of the question about serials, you know, obviously periodicals were important at this time, very important, but I see them as sort of being a register above these

materials that I'm looking at. They were one of the genres that material was drawn from. And, you know, there was back and forth and there were different obviously, different registers of periodicals as well. So many of these texts were not serials, but they were printed and reprinted and reprinted. And quite often, again, there'd be a declaration. This is a newly updated, newly expanded. Sometimes there really would be changes. Quite often, there would not. So you would have in that sense, multiple iterations of one text over time, but not, you know, really serial additions of a compilation.

- Great. Thanks. And Amit actually had a follow up question also that speaks to the different cases that you have, and his question was directly about the chapter that you didn't speak about, but the one that you said you're working on now, which is on you know, grafting plant grafting, or grafting a plant, but perhaps this is an opportunity to speak more broadly to how you selected the cases that you did for, for the project as a whole.

- Yes, I am currently selecting them. I've actually selected most of them. One of the, I'm working with in most of these chapters, I've got one earlier text that seems to, to continue to be of great importance. And I'm working with a very early Qing text called the Mirror of Flowers or the Huajing. And it has one particular duan that was very focused on what you do with plants. So not just what they look like and what their morphology might be, but what you do with them, including grafting. And that section was re-appropriated into the Wanbao quanshu in 1894, the whole sort of second duan. And then this question of grafting comes up continuously in later books, often going back to the Huajing. So that is sort of the text that I'm working with. The cases that I'm working with, I've got, I found some wonderful things in wenshi ziliao. There was one that came out of Chengdu and, and traced a series of flower farmers from Chengdu, and really gave me a sense of, you know, how these people marketed. I never knew that people rented for example, potted plants. So this was something that some, this is the way some people made a living by, you know, creating these beautiful potted plants and then renting them to officials when they'd have a big event. So that's one source. Also this investigative report that I talked about that was done in Shandong, which went deep into what's wrong with fruit cultivation here, which gave you an insight into how people were grafting and what else they needed to do. And I've also got some materials from nothing from archives for this one. But other things from different periodicals dealing with, you know, quite often the need to reform agriculture. And so that will give you insights. I mean, all of this is sort of reading against the grain. And also some accounts of particular gardeners. And so I've got one, a blind gardener. That's somebody who's going to figure in it. And it talks sort of about his family and about his skills and how they were passed on. So though, that's an example of the kinds of places that I'm drawing from.

- Great. Thanks. Oh, I was gonna say that we're out of questions and I wanted to ask the final question, but we just got another one. So let me, let me ask that and then I'll hold off my own question for the end. So this is from Charlene Canal, who says, in some sense, recent success in manufacturing in China also relates to domesticating and localizing foreign technologies to make them applicable and affordable to the general population. So do you see some parallels in the, in the two different timelines? Also, what was the role of the government in knowledge localization? And do you see things, see things are different to the things that the CCP is doing now to popularize science and technology?

- Great questions. In terms of parallels with today, I would have to read more about, you know, this kind of thing that you're talking about, manufacturing, et cetera. But I do find strangely enough, that as I said, many of these books are being reprinted and the preface, there's one particular book called "The Mishu Hai: The Ocean of Secret Techniques" that was reprinted in the 1990s with a new preface that said, you know, and if you are having a big event, you can use this information to know about how to prepare your flowers. And if you were doing this, you know, it said quite clearly, some of the stuff in this book is useless, but it did say, you know, there are things you can still use. So I think, you know, I'd really like to know, I also have an account. Now, this is earlier, this is from the Cultural Revolution, an account by somebody in his biography who talks about this, the same book, "The Mishu High," and the Red Guards come in and they see he's got this book. And because it's got secret in the title, they're convinced that it's some kind of nefarious book. And so they take it. And, you know, he says, you know, this is just a book that the minjian used to do things and to, you know, to take care of local things. And he obviously was using it and he was a teacher. So, you know, some of these, you know, little sort of everyday techniques do still have a certain use. And in terms of the question of the government, I'm really not looking at it from that angle at all. The government was not doing much, which is one of my arguments for why the Mundane Revolution was necessary. And when it did do things, as in the new life movement, under the nationalists, it was very heavy handed. And there was always a disconnect between what they were pushing on people and what people really needed. And that was the point I tried to make about these multiple iterations of enlightenment projects that always had the same blind spots, which were quite often just not getting what local people needed or not getting the right level of knowledge at which to access. And it was interesting last week, there was a talk by Perry Link on the Heidelberg series. I don't know if any of you heard it, but he was talking about a minjian movement in the early 2000s. And I could sort of see the same thing happening, even though I questioned Perry about it, and he didn't agree, but he said, you know, the sort of the intellectuals will go down and try and distill knowledge from the minjian from the grassroots, and then use that, or sort of use that to, to determine

what their values were. And I see this again, as a project that is going in with an agenda and applying it to the elite level. So I am not looking at the top down. I don't think what the CCP is doing now is what I see going on in this Mundane Revolution. And that is part of the issue.

- Great. Thank you. So, if I can now ask my final question or the final question, which really is, is about, do you sort of, you're focusing really on science understood in the broadest of terms, but do you think what you're, what you're finding and what you're trying to sort of articulate is particular to science at this point in time or are there other bodies of knowledge that are also being disseminated, or, you know, combined with pre- you know, older traditions of knowledge. And I'm thinking here in particular about other kinds of things that were generated, you know, in the wake of the self strengthening movement, in particular knowledge about other parts of the world, new kinds of geographic knowledge, new kinds of ways of thinking about other states, you know. Things that emerged out, you know, translations done by Yan Fu, of course, but also translations of textbooks on political economy, geography, things like that. Do you see this as being, would those kinds of knowledge be part of what you were, what you were describing or does, is there something special about scientific knowledge and the popularization of science at this time that you're really able to identify?

- Also an excellent question. I think that the kinds of, sort of problems that I'm looking at, sort of relate to, you know, technology, for example, electricity, medicine, but definitely not. Initially when I started the project, I wasn't going to address science at all, because most of these texts do not. They start to later, as I said, some of them start declaring in their prefaces. This is scientific, but we really don't see the term kexue. So I'm talking about scientizing. I'm sort of, you know, using this language to talk about how they're sort of systematizing and sanitizing and reg- and standardizing some of these texts. So that's my sort of imposition, but I, you're absolutely right. There were various kinds of knowledge that were being, you know, sort of mixed in different ways. So I think if I was looking at geography in particular, or if I was looking at, you know, some other kinds of topics, you would see other sorts of mixes. So, you know, and again, I have to think hard. Is science really doing the right kind of work I want done for this? I've sort of come to that recently and I'll have to think about it further, but essentially what I'm saying is that new forms of knowledge were being created. They were being created with constant, in constant conversation with what had gone in the past, but they were not totally removed from, you know, startling new things that were coming in. They were just sort of brought in in a different way. And, you know, rather than purified were sort of integrated into a mix that I think was more palpable for this level of the common reader. And one that just made more sense, in many ways. I mean, you know, the heavy handed

imposition of scientific knowledge that, you know, just didn't connect with what people were dealing with was of very little use.

- Yeah. No, thank you. I mean, I think there is something, something to be said because there is so much, so much of sort of the 20th century has been understood in terms of the legitimacy of science. However, understood, whether as a sort of top down political project, or as something much more diffused that then is used as a way of making sense of the world, but also thinking sort of perspective of about a better future. So I think there is something that might be something distinct, but I, but it's something certainly that I also puzzle with, to what extent do we, at times, you know, fixate on science itself?

- Yes.

- And maybe not, we shouldn't define it in, in terms that scientists define it.

- So, right, right. So I'll have to be very careful if I am gonna use it, how, you know, I think I'm talking more about scientizing than I am about science.

- Yeah. All right. Well, thank you so much. This was really fantastic. And the project is super exciting. So we are all looking forward to, I'm not, well, you're close to being done. I think I can say that much at least. So we are really looking forward to seeing it out so that we can all read it. So, and thank you to all the audience members who stayed with us. Thank you, not just for today, but for the entire semester. I'm on leave, so we won't be having any talks in the spring, but I hope to convene more talks next academic year. So Joan, thank you again for a fantastic talk and a fantastic project. And thank you everyone for joining us.

- Thank you, Arunabh. And good luck on your leave. We'll look forward to your work on dams.

- Thank you.