

NTU Institute of Science and
Technology for Humanity (NISTH)

NISTH NEWSLETTER

The latest news, views, and announcements from NISTH

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Technological Change has promises & problems

Technology has often been promised to be an enabler, from nuclear energy to artificial intelligence, which will increase our life quality and productivity. How we use technology and how we talk about technology is always a comprehensive process entangled with the state, corporate, civil society, and individuals of a particular society. However, the other side of the coin has also been threatening both our society and the environment.

2023 has been a year marked by technological change and the co-production of technology among stakeholders in society. The recent best-selling book *Chip War* written by Chris Miller points out that the trade disputes between the United States and mainland China have shifted towards competition in high technology. Nvidia's artificial intelligence (AI) chips have also become the stock market focus and a popular topic in the media. Its CEO, Mr. Jensen Huang, delivered a commencement speech at the National Taiwan University projecting a highly competitive future: 'Run, don't walk. Remember, either you're running for food, or you are running from becoming food.'

While this tense future vision is projected, does it imply that technology is Max Weber's 'iron cage' of rationalization which is an inescapable human destiny? How shall we understand the other socio-technical promises including Germany's 'Industry 4.0' on manufacturing technology, Japan's people-centric 'Society 5.0', and/or the big techs' 'Age of AI'? Along the same lines, the technical controversies in the year 2023, for example AI and ChatGPT, Fukushima wastewater, and hot summer, are both the consequences and co-production of technological changes.

Figure 1(banner image). Dreams and promises of future life (Taken in Dubai Expo, 2020)

From ChatGPT, nuclear risk, to the hot summer

Firstly, the popularity of ChatGPT, Bard, and Bing led the public concern over the risk of AI development. Launched on 30 November 2022, 40-language-supported ChatGPT-3.5 rapidly became talk of the town. Its instant online question-and-answer interactions have prompted ongoing discussions in mainstream and social media about Generative Artificial Intelligence (GAI) and its direct or indirect impacts on the economy, employment, education, creativity, translation, and daily life. On the one hand, reports from Goldman Sachs and the World Economic Forum (WEF) predicted the potential replacement of tens of millions to billions of jobs by machines, possibly leading to a global wave of unemployment. On the other hand, the United States based Future of Life Institute and the Center for AI Safety (CAIS) launched international online petitions that addressed the risks of developing artificial intelligence technologies, endorsed by leading AI researchers and developers in the industry. The former 'Pause Giant AI Experiments: An Open Letter' garnered over 30,000 signatures worldwide, while the latter 'Statement on AI Risk' saw approximately 600 experts all over the world endorse it. As a response, the Group of Seven (G7) nations reached the 'Hiroshima AI Process,' an attempt to establish international regulatory standards for AI by the end of this year.

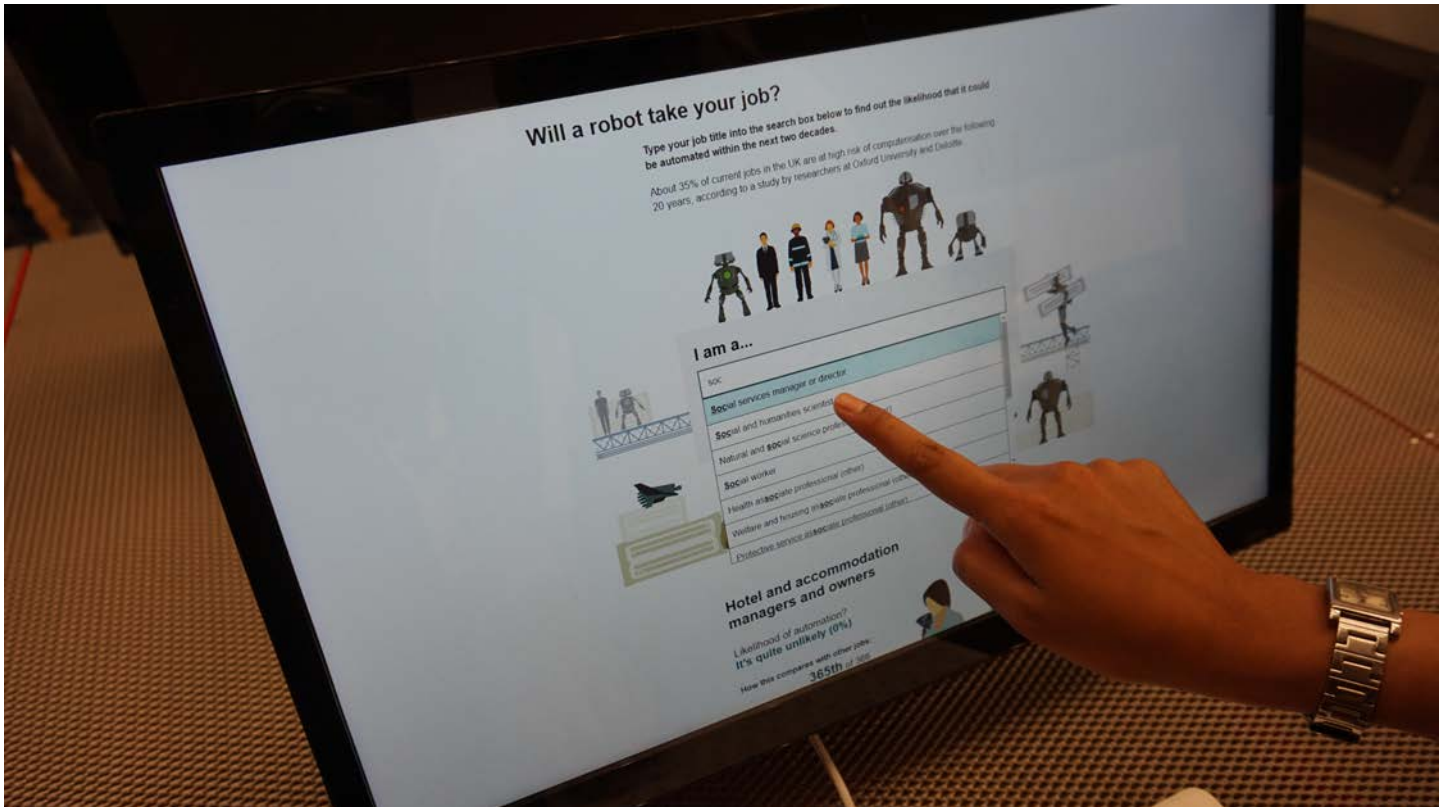


Figure 2. Fear of robots taking the jobs of humans (Taken in Vienna Biennial, 2017)

Secondly, likewise Hiroshima and Nagasaki, the Fukushima nuclear disaster has become a non-healing wound in Japan and East Asia. In addition to the endless reports of high radiation, ecological disasters, and food safety issues in Japan and in the neighbouring areas, the recent release of treated nuclear wastewater into the sea, with the International Atomic Energy Agency (IAEA)'s safety review, has sparked controversies. There are reported complaints from citizens or officials from Japan, South Korea, China, and Hong Kong. On top of it, it appears that the Russia-Ukraine conflict, ongoing since 2014, has evolved into a 'long war'. The future of the Zaporizhzhia nuclear power plant has become another focal point of global attention due to the potential risks of nuclear contamination.

Lastly, our environment and economy seem increasingly unsustainable, and while issues of technology and society continue, technological change since industrialisation and capitalistic globalisation can be seen both as a solution and opening of another Pandora's box. Furthermore, the summer of 2023 has been exceptionally hot worldwide. Reports indicated that, due to the El Niño phenomenon and climate change, June broke records once again as the hottest since records began in 1919. Then, on July 3rd and 4th, we witnessed two consecutive days of record-breaking global average temperatures. Asia experienced scorching temperatures this summer as well, with Singapore hitting 37 degrees Celsius, matching the historical high set in 1984. As we approach the 2023 United Nations Climate Change Conference (COP28) in Dubai, the United Arab Emirates, where the future climate mitigation will be multilaterally discussed. It's crucial that states can join together and reflect on the implications of our activities in production logistics, workforce development, consumption patterns, technological innovation, educational outreach, political engagement, and international relations. These activities have profound effects on the environment, including the atmosphere, land, water sources, energy usage, pollution, and global warming, which are closely intertwined with our social and daily lives.



Figure 3. Technology for the Future? (Taken in Germany, 2022)

Technological change as problems and social responses

Indeed, the emergence of new technology has repeatedly redefined our notions of rights, responsibilities, culture, and social systems in our history. We shall not blindly accept all the assumptions underlying technology as 'inevitable'. This is because every society has its unique historical and cultural context, religious values, government policies, legal practices, social norms, public consciousness, and collective memories, all of which influence how technology is being used and how to represent it. If certain societies do not uphold values and beliefs such as liberty, freedom of speech, rule of law, environmental protection, trust, and cooperation, they might hinder the course of new technological advancements and socioeconomic responses.

To scholars, researchers, industry professionals, and graduate students interested in the aforementioned issues in the realm of technology and society. I extend a cordial invitation on behalf of the organising committee of the NISTH Global STS Conference 2024. We are looking for papers in the fields of AI, biomedicine, religion, robotics, smart cities, social media, nature as well as urban environments, and any others applicable. We invite you to share and engage in discussions on Science, Technology, and Society (STS) research from around the world. We look forward to your participation in the international conference themed *'Technological Change: Global STS Perspective,'* scheduled for February 22nd to 23rd, 2024. For further details, please refer to the conference website: [NISTH 3rd Global STS Conference](#).

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National Taiwan University Commencement 2023

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Japan: Society 5.0

https://www8.cao.go.jp/cstp/english/society5_0/index.html

The Age of AI

<https://www.amazon.sg/Age-AI-Our-Human-Future/dp/0316273805>

Pause Giant AI Experiments: An Open Letter

<https://futureoflife.org/open-letter/pause-giant-ai-experiments/>

Statement on AI Risk

<https://www.safe.ai/statement-on-ai-risk>

IAEA on Fukushima Treated Water

<https://www.iaea.org/newscenter/pressreleases/iaea-finds-japans-plans-to-release-treated-water-into-the-sea-at-fukushima-consistent-with-international-safety-standards>



Ross CHEUNG

Ross is from Hong Kong, currently a PhD Candidate in the Division of Sociology, NTU. He received an Erasmus Mundus Master in Global Studies (EMGS) from the University of Vienna and University of Leipzig. His current research interests include, Science, Technology, Society (STS), mega-events, socio-technical imaginaries, the future, nationalism and Hong Kong.

Colonial Hong Kong & Environmental Crises: A Dialogue with Asst Prof Florence Mok



Florence Mok is an Assistant Professor at the Department of History at NTU School of Social Sciences. Florence is a historian of colonial Hong Kong and modern China, with an interest in environmental history, the Cold War and state-society relations. She received her BA and MA in History from Durham University and her PhD in History at the University of York.

Florence Mok is a distinguished researcher specializing in colonial Hong Kong, cultural activities, and disaster mitigation. Her current research focuses on the history of natural disasters and crisis management. Her project investigates how the colonial government and Chinese society in Hong Kong tackled environmental crises, such as water shortages and seasonal epidemics, from 1945 to 1980. This innovative study not only provides historical context but also offers valuable lessons for understanding contemporary global pandemics. In this interview, she has provided fascinating insights into her current research, research methods, and the broader implications of her work.

Interviewer: Your research interests include colonial Hong Kong, varying from the studies of cultural activities to disaster mitigation. Would you please tell us more about your current research?

I am still working with my team on disaster mitigation. My current research hopes to make an original contribution to the studies of modern Asia, British colonialism and the Cold War by exploring how the colonial government and the Chinese society in Hong Kong mitigated environmental crises from 1945 to 1980, a period with growing policy initiatives, increased economic affluence and rising political and social consciousness. It focuses on the state and popular responses to Hong Kong's most common natural crises under the subtropical climate: water shortages and seasonal epidemics. The study uses a traditional historical approach of examining published sources and archival manuscripts in Hong Kong and London. The main objective is to investigate investment in new technologies and infrastructures, the alternation of landscapes, socio-political mobilisations such as mutual-aid committees and state propaganda. It also explores how knowledge of crisis management was transferred between Hong Kong and former British colonies, including Singapore. Hong Kong was a Cold War pivot in Asia. Many measures taken by the state therefore were influenced by geopolitics and Cold War dynamics, in particular Britain's relations with China and the United States.

Interviewer: What research methods do you use for your studies?

The project employs a traditional historical approach, utilizing state records from Hong Kong and London, including secret internal correspondence, intelligence, public opinion polls, speeches, meeting minutes, government reports, and Chinese press reviews. These records shed new light on crisis management and infrastructure investment at both central and district government levels. They also reveal insights into the responses of Chinese communities, influenced by Confucianism and colonialism, to existential crises. Additionally, unofficial records such as newspapers and pamphlets, in both Chinese and English, are examined, highlighting their role in shaping the collective identity of the Hong Kong community during crises. This comprehensive data promises to revolutionize our understanding of environmental history.

In addition to qualitative data, Dr. Kaman Ho, an economic historian on our team, is using spatial techniques and time-series models to study industrial data related to water, factories, and specific sectors like textiles, clothing, and plastics. This analysis aims to uncover the connection between the state's water supply capacity and post-war economic development in Hong Kong. Contrary to the neoliberal policies promoted by the British Hong Kong government during this era, the state's ability to ensure a reliable water supply played a crucial role in molding both the physical and socioeconomic aspects of Hong Kong and facilitating economic progress.

Interviewer: One of your current projects is on the history of water supply and governance in colonial Hong Kong, focusing on sustainability, industries, infrastructures and smart cities. What lessons can we learn from past experience that would aid society in building effective and resilient water supply nowadays?

This study, I believe, has the potential to shed light not only on the recent problem of heavy rainfalls in Hong Kong, but also in general on the current global crises of climate change and epidemics. Since it traces past practices used to alleviate emergencies in a densely populated and newly-urbanised environment which had an under-developed welfare system, supported by a narrow taxbase: these are conditions that are found in many parts of the world today. The effectiveness of the colonial government and the Chinese communities in handling these different types/episodes of crises will be evaluated and can be compared, determining whether Hong Kong was a successful historical case which could be used as references in future crisis management. Historicising natural disasters will enrich the academic discourse on environmental changes and urbanisation. Studying Hong Kong will identify similarities and differences in responses between the East and the West, complementing on-going studies of crisis management in science, medicine, sociology and public policy.

Interviewer: You have pioneered the establishment of the Hong Kong Research Hub at NTU. Would you please describe its objectives and current initiatives and also evaluate the importance of interdisciplinary collaboration and its affect on your research?

The Hong Kong Research Hub (HKRH) is a new initiative at NTU launched in January 2022. It seeks to establish a research network in Southeast Asia, collaborating with existing initiatives worldwide. HKRH hosts interdisciplinary seminars and events of interest to both academics and non-academics. Scholars from diverse disciplines participate, offering research findings that extend beyond their specialities. My own team is a good example of the interdisciplinarity of HKRH. Dr. Kaman Ho, an economist; Dr. Siu-hei Lai an anthropologist; and Dr. Jack Greatrex, a historian, bring different skill sets and diverse research methods, making our findings non-linear and relatable across scholars in the field as well as to audiences beyond. To date, HKRH has organized over twenty events, including book talks, seminars, and roundtables. For more information, visit <https://hkresearchhub.org> or follow us on Facebook and Twitter.

Interviewer: What is the research direction you are planning to pursue next?

For my next project, I am hoping to explore the transnational history of the Cold War through Hong Kong as a focal point. In particular, I am hoping to explore how left-wing ideas were spread through various types of cultural activities via colonial Hong Kong, a pivot and loophole in the Cold War, to overseas Chinese in Southeast Asia. The project will focus on the three modes of communication used by the PRC to propagate the communist regime and expand their influence in the region: printed publications, 'traditional' cultural activities and school education. It will also examine how the colonial/post-colonial governments in Hong Kong and Southeast Asia, in particular Malaya and Singapore, collaborated and countered this left-wing influence.

Interviewer: How do you draw your inspiration for research?

Reading widely really helps. Sometimes reading thought-provoking journal articles and books that are not directly related to my field could be very inspiring. In addition, I run an informal study group with a group of early career scholars like myself. We meet regularly (once a month) just to discuss findings and exchange ideas. I personally find running this group very rewarding: it is not merely an academic group but also an important support system for us. Sometimes we also run career talks to share our experience in publishing and job hunting.

Interviewer: What advice would you give to young undergraduates who are about to choose their academic path?

Follow your interest, but also be realistic and carefully evaluate all the available options.

Interviewer: What is your hobby or passion aside from research activity?

I love music and art— they always help me to take my mind off work and just be in the moment. I am also enjoy travelling and photography, exploring the world and capturing important moments in life.

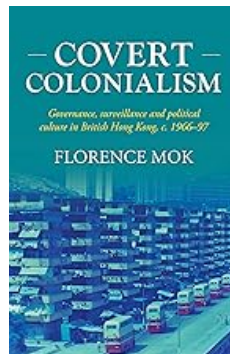
Interviewer: Did you or do you have a role model?

My PhD supervisor, Prof. David Clayton at York, is my role model in academia. David is a great researcher— always curious and very detailed minded. His work always provides important insight into significant but underexplored subjects. And as a mentor, he is always patient, supportive and enthusiastic. He teaches me the art of being a historian, and reminds me of the importance of history in this time of turbulence. Without his encouragement, none of my academic achievement would have been possible. I will always be in debt to his support, academic and pastoral.

Interviewer: If you were not a researcher, who would you become?

I honestly don't know. Research has always been my interest and I wanted to be a historian since I was nine. It would be hard to imagine an alternative career path.

Interviewer: Would you recommend a book for our audience that strikes you the most? Why?



I'd like to recommend my recent book, "Covert Colonialism: Governance, Surveillance, and Political Culture in British Hong Kong, 1966–1997," published by Manchester University Press in July 2023. This book delves into state-society relations in Hong Kong during its colonial period, utilizing previously under-explored archival sources. It examines how the colonial administration investigated Chinese political culture and how social movements in Hong Kong influenced policymaking. The book focuses on the colonial state's capacity to monitor public opinion through covert opinion polling exercises like Town Talk and MOOD.

While Hong Kong residents had limited democratic rights, these exercises constructed 'public opinion' used by unelected officials to address public needs and reduce social conflict. This shift in colonial governance had two implications: it strengthened British control through covert colonialism while acknowledging Hong Kong's transition toward a new form of 'decolonization.' Importantly, covert colonialism allowed ordinary people to engage in policymaking in a state-controlled manner without provoking a hostile response from China. It's a valuable read for those interested in Hong Kong, China, and colonialism. To obtain a copy, visit <https://manchesteruniversitypress.co.uk/9781526158192/covert-colonialism/>.

In summary, Florence Mok's multifaceted research interests, extensive contributions to academia, and dedication to uncovering the complex history of Hong Kong and modern China make her a prominent figure in the field of history.

HAPPENINGS:

Past Events

NISTH ThinkOut Podcast Series:

'Food for Thought', with Prof William Chen

NISTH ThinkOut Podcast on 'Food for thought', was a very insightful discussion between our newest NISTH Fellow, Assoc Prof Nurul Amillin Hussain and Prof William Chen. Prof. Chen is a distinguished academic and the Michael Fam Chair Professor at NTU. He has been the Director of the NTU Food Science and Technology Programme since 2002. Prof. Chen is a renowned expert in food science and technology, and his research has made significant contributions to the field.

Prof Chen, highlighted that Food is not only a necessity for survival but also an integral part of our culture, social interactions, and enjoyment of life. Focusing on the development of novel food processing techniques, food safety, and quality enhancement, he has enabled collaborations with the food industry, government agencies, and non-governmental and international organizations, helps to keep the Singapore innovation integrated with the larger world. He mentioned that the food waste generated on a daily basis it is fairly large and hence he stressed that food waste management is crucial and must be dealt with upfront. He believes that it is a collective effort to enhance our food security, and we must rally support toward local suppliers and producers to keep Singapore sustainable. Watch it on our [YouTube](#) channel or listen to it from our [Podcast](#) series.



NISTH Outreach:

Meeting with Universitas Gadjah Mada (UGM), Indonesia



The Department of Architecture and Planning, Universitas Gadjah Mada (UGM), Indonesia, organises an annual student excursion to Singapore. This year their study focused on, 'Gateway Cities'. Prof Sulfikar Amir's work on the sociopolitical construct of resilience sparked an interest in the organiser, who reached out to NISTH, to give their students an opportunity to discuss the role of Singapore as a gateway city in the era of globalization.

The 42 students and 2 lecturers, visited the NTU campus on the 14th of July. The visiting group were hosted at the Hive and given a brief overview of NTU, the socially impactful research being conducted and how we contribute toward Singapore's innovation. The Q&A session was particularly interesting as students had many queries on how the innovation in Singapore can be applicable to a large economy like Indonesia. Their key takeaway was that the Singapore system runs so efficiently because the strong government invests, develops and leverages completely in the people and their skills. With the interaction we hope to be able to collaborate with UGM in the future.



NISTH ThinkOut Podcast Series: How do we respond to the Climate Crisis?

In this episode of the NISTH ThinkOut Podcast, we (Assoc Prof Sulfikar Amir), meets with Professor Benjamin Horton, a Leading Voice in Climate Change Research and Advocacy. He is the Director of the Earth Observatory of Singapore (EOS) and a Professor at the Asian School of the Environment, NTU.

Beyond his scientific contributions, Prof. Horton is an outspoken advocate for addressing climate change on a global scale. He recognizes the urgency of the issue and actively engages in public outreach and education efforts. Through public lectures, media appearances, and collaborations with policymakers, he strives to raise awareness about the gravity of climate change and the need for immediate action. Prof. Horton's expertise and passion make him a compelling voice in the fight against climate change. He shares with us, not only his journey thus far but also his unwavering dedication to understanding the complex dynamics of climate change and its consequences on coastal areas has established him as a leading authority in the field. Watch it on our [YouTube channel](#) or listen to it from our [Podcast series](#).



Pediatric Bio-Ethics: Is there a balance?

In this episode, we were joined by Professor Dominic Wilkinson. Professor Wilkinson is a bioethicist of international renown. He is currently a Professor of Medical Ethics at the University of Oxford, where he is also the Director of Medical Ethics and Deputy Director at the Uehiro Centre for Practical Ethics. Prof Wilkinson, shared his views on ethics, and their relevance to the field of medicine. He also highlighted the growing need for guidelines and standard practices to be put in place with the advancement of technology and its application in the medical field. Being a medical practitioner first, he has first hand knowledge of how dependent doctors have become on the new age instruments and technological advancements in the handling of patients. When it comes to children, they are the most vulnerable segment of the population for whom decisions are most often, if not always, made by their caretakers, guardians or parents. It is important to understand how best the decisions help the children involved.

Prof Wilkinson also explained how 'practical ethics' has become the most relevant subject. Practical ethics is applied ethics which looks at how it is applied and how it is used to make an impact on policy. He cautioned that we need to be aware that technology is not made to radicalize the system but can be beneficial for the system.

Watch it on our [YouTube channel](#) or listen to it from our [Podcast series](#).

