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Blurring the future: AI regurgitation and the Singapore Muslim community

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Blurring the Future

-AI Regurgitation and the Singapore Muslim Community

James McGrail



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Blurring the Future

AI Regurgitation and the Singapore Muslim Community

Proefschrift

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there is no future in nostalgia

& certainly no nostalgia in the future of the past.
now, the corner cigarette-seller is gone, is perhaps dead.
no, definitely dead, he would not otherwise have gone.
he is replaced by a stamp-machine,
the old cook by a pressure-cooker,
the old trishaw-rider's stand by a fire hydrant,
the washer-woman by a spin-dryer
& it goes on
in various variations & permutations.
there is no future in nostalgia.

Arthur Yap 1977

The cover photo is the blurring together of two photographs, the first is the image of a screen malfunctioning in a mosque taken by my interlocutor Iskandar. The second is a picture I took of a poster displayed in a back alley of China town, near Maxwell food centre, showing AI generated skyscrapers.

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As Michael Herzfeld argues, anthropology is the comparative study of common sense. That means nothing within these pages would exist without my interlocutors. I'll keep your identities blurry here, but I remember every coffee, walk and conversation.

Finally, Anne. Imagining the future is difficult, but picturing mine without you is impossible.

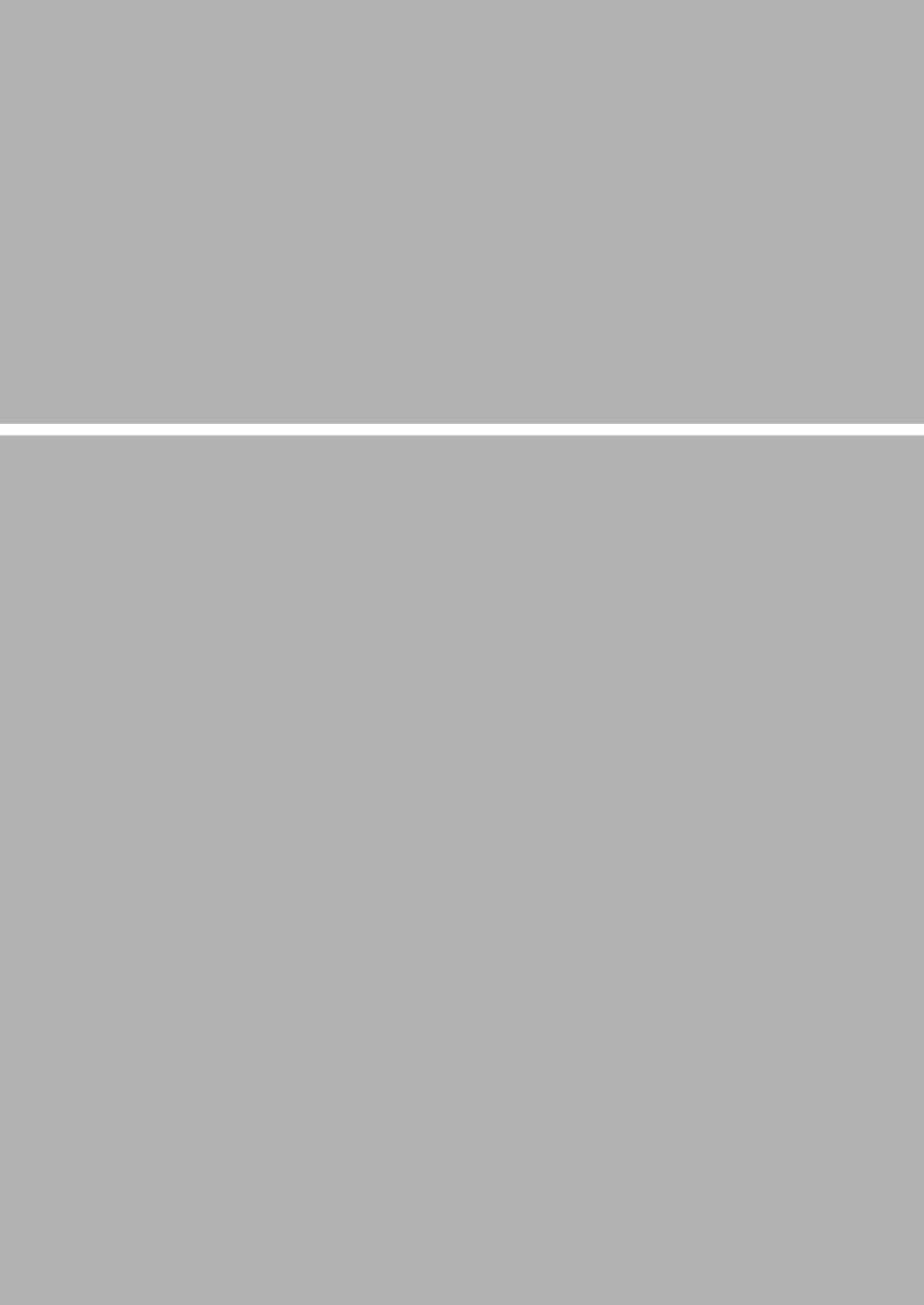
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LIST OF KEY ACRONYMS

AGI	– Artificial General Intelligence
AI	– Artificial Intelligence
AI4E	– Artificial Intelligence for Everyone
AISG	– Artificial Intelligence Singapore
AMLA	– Administration of Muslim Law Act
AYN	– Asatizah Youth Network
CBD	– Central Business District
CMIO	– Chinese Malay Indian Other
CNA	– Channel News Asia
F/OSS	– Free Open-Source Software
gAI	– Generative AI
HDB	– Housing Development Board (also refers to apartments built by this organisation)
ICA	– Immigration Checkpoint Authority
IMDA	– Infocomm Media Development Authority
ISA	– Internal Security Act
LKY	– Lee Kuan Yew
LLM	– Large Language Model
MATAR	– Multi Purpose All Terrain Autonomous Robot
MCCY	– Ministry of Culture, Community and Youth
MOM	– Ministry of Manpower
MRHA	– Maintenance of Religious Harmony Act
MRT	– Mass Rapid Transit
MUIS	– Majlis Ugama Islam Singapura
MuslimSG	– Muslim Singapore (app)
NAC	– National Arts Council
NUS	– National University of Singapore
OCBC	– Overseas-Chinese Banking Corporation
PAP	– People’s Action Party
RPCS	– Research Programme in the Study of Muslim Communities of Success
SAF	– Singapore Armed Forces
SAM	– Singapore Art Museum
SEO	– Search Engine Optimisation
SMI	– Singapore Muslim Identity
SOE	– State Owned Enterprise



Introduction

One Day in AI Singapore

ONE DAY IN AI SINGAPORE

Sat on a zoom call at an AI training session run by AI Singapore (henceforth AISG), the government owned company tasked with educating the public on AI, I listened as they described a day in the life of AI. “Imagine,” they prompted, “you wake up in the morning, and you say hey Siri, put on my morning playlist. Then you head to work checking the weather as you do, which Siri tells you looks fine, you leave the umbrella. At lunch you use Google Translate’s image function to translate the menu at the hawker centre¹. After a long day, you arrive home, your smart fridge has ordered some groceries as it noticed you were running low. You head to the couch and open a streaming app, which suggests the latest shows you might like based on your watching habits. You head to bed, hardly having noticed the AI which followed you through each step.” This description fits neatly with the definition of AI which the Singaporean Government proposes, “a computer program that can sense, reason, act and adapt.” The AI in this imagined day, listens to your voice, it feels the weather, sees the menu, and adapts to your preferences for food and entertainment.

Such descriptions of everyday AI have become almost as commonplace as the AI interactions they describe. In Elliott’s (2019) “Culture of AI”, he opens with a similar description of a hypothetical day in AI. However, these AI days refer only to the visible AI which many people voluntarily engage with on a daily basis. This in my view, is only the tip of the AI iceberg, especially in Smart Nation Singapore where AI enabled technologies abound. The other AI, below the water line, is the AI of governance which this thesis is primarily concerned with. These are AI systems which see Singaporeans as they walk through the streets, that store people’s personal information, and which inform and sometimes even write policy. In particular, I am interested in how such systems are brought to bear in the governance of Singapore’s Muslim minority. These systems are also inside the mosque, tracking the number of congregants, translating the service, and perhaps soon informing religious rulings. In other words, these systems shape the everyday in Singapore, particularly for some of its more marginal communities, and in so doing construct their future.

¹ A hawker centre is a food court common in Singapore. The centres are owned by the government with individual vendors owning stalls within the centre. I assume this use of AI for translation was aimed at the several lifestyle migrants (expats) in the zoom call including myself.

So, at the risk of engaging in cliché, I want to propose a different day in AI, one in which AI is ever present but slightly less than visible. In a sense, therefore, these are snapshots of when the AI governance system of Singapore asserts itself, becoming, if only for a moment visible.

Arriving at Singapore's terminal 3, I head towards the immigration expecting a long wait². Instead, I am greeted by a row of automated gates. I present my passport and my face is scanned. This is cross referenced with my biometrics, iris, and fingerprint scans, which I provided on my first visit to Singapore. Simultaneously, the system compares this information with the data on my e-arrival card which I filled out online yesterday. There is not a human immigration officer in sight. If I were Singaporean, I would not have even needed to provide my passport, as the ICA's (Immigration and Checkpoint Authority) new passport-less clearance system uses AI facial recognition to verify the identity of permanent Singaporean residents. That facial scan data is likely cross-referenced with each person's identity card which lists not only their name, date of birth and nationality, but also their race, as one of the four racial categories of the nation, Chinese, Malay, Indian and Other³. At the moment of arrival in Singapore, AI systems are categorising and sorting people. From there, the data dips below the water line becoming invisible again. What happens to those facial scans is unclear.

From there I head toward the MRT (Mass Rapid Transport) station which is handily located in the basement of the airport. As I do I pass by a MATAR (Multi-purpose All Terrain Autonomous Robot police) robot. First deployed in 2019, these robots, equipped with 360-degree cameras, sensors, and a speaker for shouting orders, are named for the Malay word for eye (mata) which is also colloquially used in Singapore to refer to police (mata-mata⁴). Indeed, these robots live up to their name, given their placement in Changi airport to assert a police presence. Given that they are equipped with sensors and cameras, it is likely that they are using AI assisted facial recognition software. Perhaps using the data provided by

-
- 2 This 'day' is a composite of various days experienced across my fieldwork in which I caught glimpses of AI. However, I would argue that it is entirely possible to have a day in which all these instances of AI are experienced.
 - 3 Race as we will go on to explore is often conflated with religion, therefore, being Malay on an identity card is often conflated with being Muslim. According to 2020 census data, a hair under 99% of Singaporean Malays are Muslim (Department of Statistics Singapore 2020). However, 23.8% of Singaporean Indians identify as Muslim as well. A significant percentage of the Singaporean Muslim community are therefore non-Malay.
 - 4 In Indonesia mata-mata translates to something like spy, which speaks both to the intentions of these machines, and to the strained relationship between the Singaporean State, and the Muslim community.

immigration checkpoints. During the pandemic, these MATAR robots were mostly deployed around migrant worker dormitories in order to enforce social distancing guidelines. Given the predominance of their use in that context, and the illusion of their name, these robots are perceived by some of my interlocutors as roving enforcers of state oversight, predominantly used to keep minority groups under watch⁵. MATAR, the eyes of the state able to move anywhere.



Figure 1-MATAR Robot on patrol.

As I descend the escalators towards the MRT, I see a ring of cameras facing in all directions. I am reminded of the many times I approached MRT stations with my friends and they hesitated. On one occasion Iskandar, who we will meet repeatedly throughout this thesis, asked to stop our interview, and put away the microphone before we approached an MRT station which we were not even entering. As I packed my things away, he said, “You see how the body becomes really reflexive of this because MRTs are known to be very surveilled.” These cameras, which abound around MRT stations, are the most visible part of the nationwide, Smart Nation sensor platform. Thousands of cameras and sensors which track everything from

5 What is particularly telling about this, is that whilst Singapore enjoyed low covid rates, thanks in part to technological intervention, migrant workers felt the brunt of the pandemic. Confined to dormitories and patrolled by MATAR, Migrant workers made up 88% of nationally confirmed cases of Covid-19 (Koh 2020). Just one of many ways Singaporean minorities feel the burden of the countries Smart Nation ambitions.

crime rates to weather conditions have been installed across Singapore since late 2014 (Kong and Woods 2018, 687). The data captured by these technologies is then sent to the government's tech office where AI is used to parse and sort it for policy insights. I pass beneath the cameras wondering whether this one is using facial recognition, and which government spreadsheet my data will end up on.



Figure 2– Mosque translation

I ride the MRT as far as Bugis station, then impulsively decide to alight. I check my watch; it is a bit before 1pm. If I am quick, I can grab a pastry at Mother Dough and still make it in time to listen to the Azan at Sultan Mosque, the only mosque in Singapore which is permitted to project the call to prayer outside its walls⁶. Having retrieved my lunch from the bakery I took a seat outside the mosque within view of the big screen translating the Friday sermon from Malay to English in real time. I wondered to myself whether this task is being done by hand, or if the transcription and translation are being managed by AI software. At that moment, a few errors appeared in the next sentence as the Imam spoke, but were they made by a harried Mosque volunteer, or by machine misinterpretation?

My thoughts turned to the sermon itself, it is well known that these speeches are written centrally by MUIS, the Islamic religious authority in Singapore, and then distributed across the 69 mosques which the statutory

6 Sultan Mosque is permitted to project the call to prayer because it is located in Kampong Glam, the neighbourhood which was the traditional seat of the Malay royal family in Singapore. A young man in Sultan Mosque explained to me that because the land under Sultan Mosque was still owned by Malay royalty it was exempted from laws which prevented other mosques from playing the Azan over loudspeakers.

board governs⁷. But had the MUIS staffer who wrote this week's sermon used ChatGPT? Or perhaps just used the LLM (Large Language Model) to check their grammar? I thought of my interlocutor Husain, a writer and nurse, who told me that he had long suspected that these sermons were now being written, at least in part, using generative AI. Another interlocutor Ahmed, a coder who runs a Muslim tech mutual aid group, told me that he was certain ChatGPT was behind these sermons. Although in his view it hardly mattered, they came out bland either way. On that Friday afternoon, I wondered if I was watching an AI transcribe the words of another AI within the mosque, with a human being intervening merely to communicate between the two.

The sermon ends and the congregation streams out onto Muscat Street. As they do, I recognise a young man who volunteered in the mosque explaining Islam to tourists. I wave hello and we walk together towards my bus. Thinking of the possible AI sermon, I ask him what technology he uses in his daily religious practice. He shows me the MuslimSG app, an app created and maintained by MUIS but tells me that he only used it for prayer times and Qibla direction. The articles, he tells me, are a bit boring. For him, if he wanted to learn more on a topic, he watches Islamic scholars from Indonesia and Malaysia on YouTube. I wonder how the YouTube algorithm, another kind of AI, is shaping his Islamic learning.

We reach Bugis train station, where I get the bus, and we part ways. As I wait for the bus, I see a man walking around the entrance to the MRT with a large plasma screen strapped to his back. The screen advertises a Skills Challenge @libraries course which offers an Artificial Intelligence skills curriculum. These sessions I had learned were offered as part of SkillsFuture, a government subsidised education programme for lifelong learning. The slogan of SkillsFuture is "When jobs evolve new skills are needed. Secure your future by acquiring the right skills." This scheme is part of a wider emphasis in Singapore that all citizens must be upskilling in order to keep up with the development of new technologies. There is no point in a Smart Nation without Smart Citizens working within it. And working is the operative word in neoliberal Singapore. As is often repeated in Singapore, AI will not take your job, but someone using AI might.

7 It is widely speculated that these sermons are written in conjunction with the Minister of Muslim Affairs, who add government talking points. For example, Ahmed told me that this frequently happened during the pandemic where sermons repeated government talking points. This is hardly surprising given that MUIS is part of the Singaporean state. However, it adds to the general perception that these sermons do not come from the heart of the Imam and are generally formulaic. See chapter three for further discussion of this trend.



Figure 3– AI skills training advert.

I take out my phone to check Instagram while I wait for the bus, using some of the Singtel⁸ provided internet which I am accessing with a local sim. As I tap through my friends' stories, I am delivered an ad from the Singapore government which reads, "Smart Citizens don't gatekeep." An advert which seems to encourage open data sharing with the government. Then a few taps later I got an advert for a story on themuslimvibe⁹ about a Quran app. In the comments there was a passionate debate going on, comments ranged from excitement to horror, while some extolled the virtues of reading the original texts and gathering with others to discuss them, others speculated about the possibilities of this new technology, "If this continues now we can [k]now what [Prophet] Mohammed actually did on [sic] his life but the real truth of it." With my bus approaching I take some quick screenshots and board the bus.

The bus drives through the downtown past Marina Bay 1, an anonymous office building a stone's throw from the city's mascot, the Merlion where tourists queue to have a photograph. However, this is not just any office

8 Singtel is a government owned telecom company, and yet another way for the state to Hoover up the data of citizens and visitors of the country. Singtel. 2025. "Share Information" Accessed: 1 December 2025.

9 Themuslimvibe is a media platform started by British Muslim entrepreneurs Salim Kassam and Haseeb Moosa with the aim of reclaiming the narrative around Islam. The platform was popular with several of my interlocutors.

building, but one of 118¹⁰ data centres all around Singapore. This one, owned by Microsoft, is more of a rarity given its location right by Marina Bay, but regardless of where you are in Singapore, you are never far from a data centre. Though you could just as easily pass through the entire city without ever noticing one given their anonymous appearance. I wonder as we pass by how much of my personal data from the cameras and sensors I already passed today is rattling around inside that building.

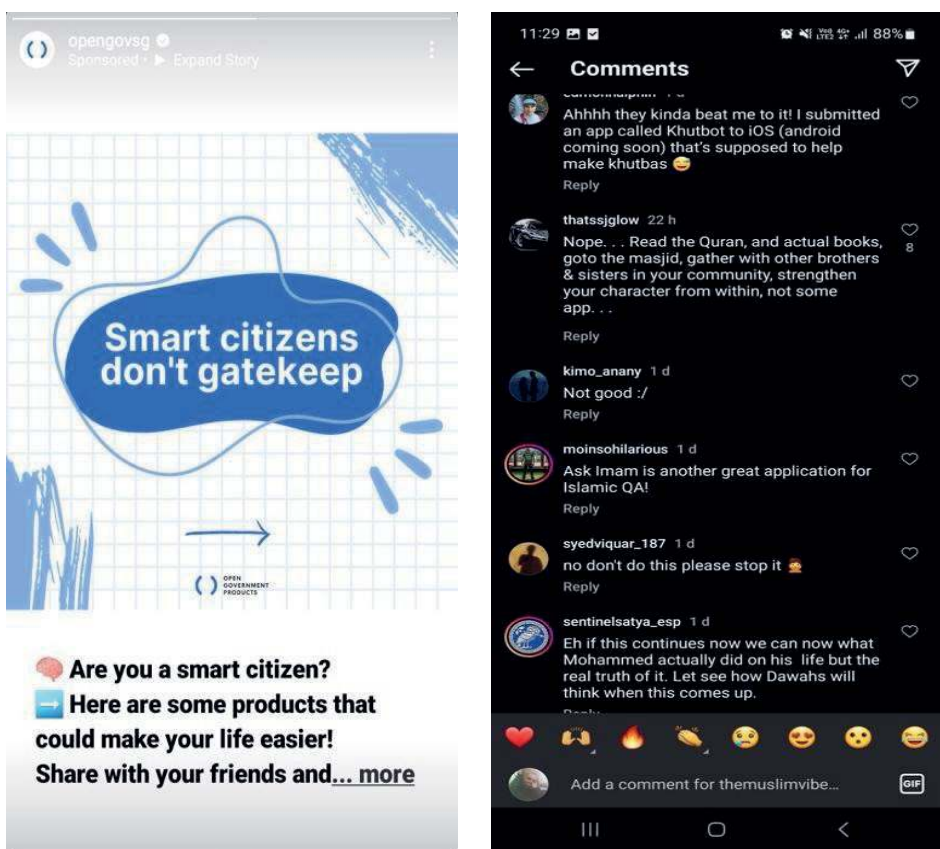


Figure 4– Government Smart Citizen advert, Comments from themuslimvibe on Instagram

10 This is an estimate, in many presentations I have said that there are over 70 data centres in Singapore, but because many are protected government buildings which are not officially listed online it is hard to give a precise number. Some data centre mapping websites now estimate 122, but the number could be even higher. This data is drawn from datacentres.com a data centre directory for entrepreneurs looking for data centre services. Datacenters. 2025. "Singapore Data Center locations" Accessed: 1 December 2025.

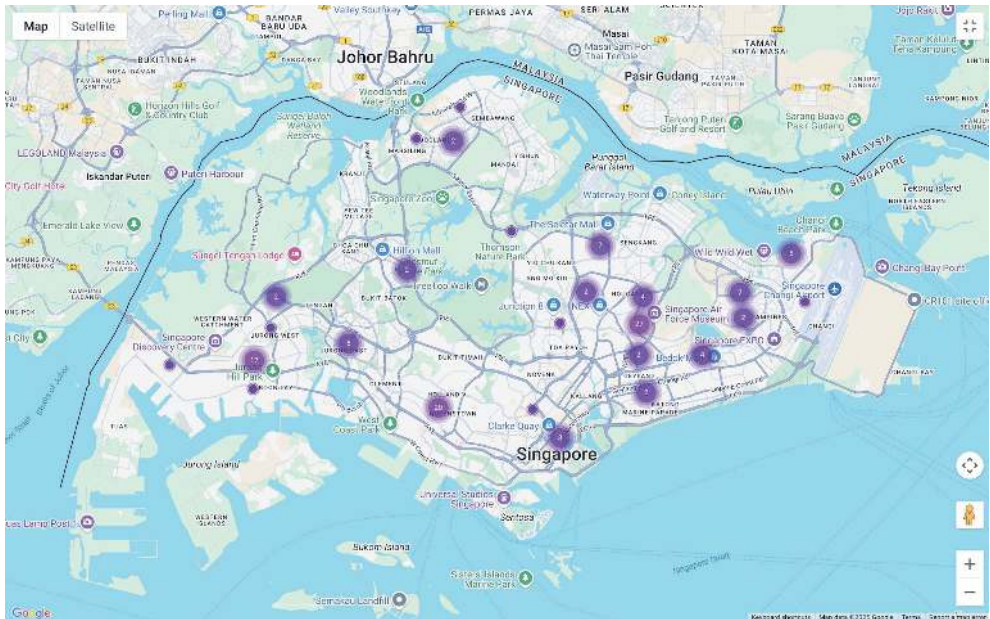


Figure 5– Map of Singapore data centres. Source: <https://www.datacenters.com/locations/singapore>

As the bus approaches my stop, I get out my Winnie the Pooh MRT card¹¹ and head to the doors. Posted there is a sign reminding passengers that they must tap in and out with their cards as is standard on most public transport. However, these signs do not only request tapping to guarantee proper payment, but also to make sure that the data tracking of my journey is accurate. A feature of public transit systems now common to most cities. I tap out, ensuring that the Singaporean government knows exactly how I travelled from the airport to my hostel, an address I gave them on my e-arrival card. I step out of the air-conditioned bus into the humidity of Singapore beside Maxwell Hawker centre. However, I decide in the moment that I would rather have Xiao long bao from the Chinatown food centre. I cross the street and cut through a back road where I pass by one last reminder of the AI future in Singapore. On the side of one of the shops in this back alley, someone has pasted a picture of two AI generated skyscrapers which curve in architecturally impossible ways. Though as I look up at the skyline dominated by strangely shaped skyscrapers, I wonder if these images are the future at all, and not just a regurgitation of the present.

11 A public transport card with a picture of Winnie the Pooh on it.

In Singapore, AI technologies are so pervasive as to become quotidian even when they are visible. Despite reconstructing a day in which my data was extracted at least three times, where I listened to a sermon perhaps composed and transcribed by AI, and where AI was advertised to me twice, I told my supervisors that AI was not really visible on an everyday basis in Singapore. All these AI infrastructures simply blur into the background. Even to me, when it is my literal job to notice them. This opaque AI is further enhanced by the fact that much AI is in some cases truly invisible, composed of wires underground, software installed in the computers of civil servants, and hidden within anonymous grey buildings. What makes my day in AI distinct from those of Elliott (2019) and AI Singapore is that at no point did I choose to engage with AI. It is this interaction between state AIs and Singaporean Muslims which I am most interested in. A relationship in which Muslims do not choose to be, but remain, embroiled with the socio-technical systems of AI. The core question of this thesis then is, “What futures are imagined by Muslims in a Singapore dominated by AI enabled technologies?” Consequently, this is not a study of Islamic AI but rather an exploration of how Muslims in Singapore experience being governed by AI systems. Perhaps then it makes most sense to begin by explaining how my interlocutors define the AI which persistently intervenes in their daily life.

REGURGITATION: DEFINING AI IN SMART CITY SINGAPORE

There is an ongoing problem with defining AI. It is a blurry term which can cover all manner of sins, from algorithms, which have existed for some time, to machine learning, and generative AI which are relative newcomers. Early in this PhD project our team even had a lengthy debate about whether a vending machine could be considered AI¹². Consequently, I expected then that my interlocutors’ definitions of AI would vary widely. Yet, in all my interviews, my interlocutors were remarkably consistent despite coming from diverse backgrounds.

Whether I was meeting with Ustaz, tech workers, journalists, artists, or students, they consistently argued for AI as a regurgitation of its data set. At a restaurant, below an apartment building in Singapore’s heartlands an architect and member of several MUIS boards, explained it like this,

12 I maintain that a vending machine is an AI because it artificially replicates the labour of human beings, and because it works via a cybernetic feedback loop where data entered by a human user effects the machines outputs.

“Right now, AI is a very linear tool, whereby you enter the data, and it has a sandbox where all the information has already been put to teach the computer how to do what it needs to do, then you get the output.”

Over kopi in Kampong glam the artist bani haykal, who we will meet again later, put it more bluntly, “These algorithms are not things that are meant to communicate but to regurgitate information.” Meanwhile, during an interview in mall on Orchard Road, a journalist told me “AI will not have material to synthesize anything interesting because it is a loop, if you don’t put in anything new, then how does anything new come out?” Linear, regurgitation, a loop, this was how my interlocutors defined AI. It is from these comments that I draw the title of this thesis, and the main conceptual framing of AI as a regurgitation machine which reproduces existing ideas.

In some ways, this represents the success of Singapore’s public education on AI. AI is widely and realistically understood within the government paradigm. While this is undoubtedly true, these definitions of AI vary widely from those of AISG the State-Owned Enterprise which is tasked with sensitizing the public to how AI works. When AI Singapore was founded by the government in 2017, they had two goals in mind. First, to encourage Singaporean businesses to embrace AI and embed the technology into their processes. The second was to train both government officials and the public to use AI technologies which were quickly becoming part of their everyday. Speaking at a sustainable AI event in the summer of 2024 the director of AI innovation, Laurence Liew, stated that in the beginning, AISG focused on one-to-one sessions with small and medium enterprises in order to understand their needs. What they found, he said, was a desperate need to demystify AI. They wanted to explain what AI can do, and how those results are achieved.

With support from the government’s lifelong learning scheme SkillsFuture, AISG designed two courses, one called AI4E (AI for everyone) and AI for Industry Literacy in AI. These courses were made available for free to the public and made mandatory for all Civil servants. Having taken them, permanent Singapore residents may go on to further courses in AI development designed by AISG and subsidised by SkillsFuture. Since its launch in 2015, SkillsFuture has been a cornerstone policy of the People’s

Action Party¹³ (henceforth PAP), with the aim of upskilling citizens to prepare them for the digitised economy of the Smart Nation (Ng 2018, 125). It was at a SkillsFuture funded AISG event that I became AI certified and learned how AI was conceptualised by the Singaporean state.

At this event, AI was described as being able to create a perfect model of reality, upon which policy could be tested and refined to produce objective policy. This perfect model could only be produced in their view if copious amounts of data were collected. This helps to explain why the extraction of data is so widespread and normalised in Singapore. The argument was that with enough data, or parameters, AI can be used to objectively predict the future. Consequently, all social, political questions can be recast as technical problems solvable by tinkering with algorithms, and data sets.

However, much of the literature on how these systems work contradicts this description of AI. As both Cearns (2024) and Joque (2022) argue, AI systems like the one described by AISG do not produce objective answers, but answers which are ‘good enough’ based on the currently available data. This process owes much to Bayesian probabilities in which a best guess is repeatedly updated by new data. However, most AI systems are not truly Bayesian, they are still broadly probabilistic systems which update their estimates when new data is provided. Despite this, the idea of objective AI persists in the public imagination. As Cearns (2024) shows, several of her interlocutors took the outputs of ChatGPT¹⁴ to be fact, including one who believed that AI had uncovered previously unknown information about their family members, when it had in fact fabricated these details. Joque (2022) argues that this objectivity assigned to AI outputs is therefore not objective in the sense of representing indisputable facts, but rather in the sense of being made an object because it is processed by a machine.

This idea of an ‘objective’ AI has deep roots within cybernetics and computer science. As Hayles (1999) shows it can be traced right back to

13 The PAP (People’s Action Party) is the party which has ruled Singapore since 1959.

14 Whilst my definition of AI remains intentionally broad, this thesis does largely focus on ChatGPT. This is because the Singaporean State has an ongoing relationship with OpenAI with intentions to purchase a large portion of the company. Furthermore, it is ChatGPT which has been installed in the word processing software of Civil servants. Even propriety State AI software is often built on top of a base of ChatGPT. For example, the “AI Fatwa Bot” being built by MUIS, which we return to in chapter 3, is built on a base of ChatGPT. Consequently, ChatGPT is central to the AI systems of Singapore.

the Macy Conferences¹⁵ where the study of cybernetics began. At these conferences, the aim was to understand the human mind as a means to creating computer systems which could replicate human reasoning, and information transfer. To this end academics at the conference constructed ideas like the neural net and binary information transfer as simplified metaphors of the human mind.

For example, at the Macy conferences Shannon and Wiener (Hayles 1999) proposed a system of information theory in which words were encoded into numbers, the values of which did not change based on context. Their aim was to produce a system by which information could be transferred efficiently across systems. There were several attempts throughout the Macy conferences to propose systems which considered the context of words, but these were seen as making the process too complex. Consequently, ideas like binary encoding of language without context were seen as expedient simplifications. However, Hayles (1999) argues that across the Macy Conference, these expedient abstractions began to become reified, and by their close in 1953, it was widely held by members of the Macy Conferences that neural nets could be considered representative of the human mind.

These ideas persist into current day AI systems. Generative AI, like ChatGPT, are built on these reifications like neural nets and have become so accepted that Artificial General Intelligence (AGI), in which machines will be able to apply their knowledge across a range of tasks, is believed to be just around the corner. In fact, these reified ideas are so dearly held in AI circles that it has become hard for these concepts to be reclaimed for their original purpose. In their paper “Reclaiming AI as a Theoretical Tool for Cognitive Science” Van Rooij et al showed that producing general intelligence with neural nets is computationally intractable (van Rooij et al 2024). In other words, AGI based on neural nets would require amounts of data and computing which are simply not available. This seems common-sensical given that the foundation of these ideas was known to be a simplification, and we know from observation that human brains are extraordinarily complex systems which require significantly less data than AI systems for learning. Despite this, the paper’s authors received significant backlash on twitter where they were repeatedly ac-

¹⁵ The Macy Conferences were a series of interdisciplinary conferences with the aim of fostering cross discipline communication. The most well-known of these meetings were those on cybernetics which were held between 1946 and 1953. These meetings laid down the basis of our current understanding of cybernetics built around models of the human mind.

cused of not understanding AI systems. The reified neural net, which is capable of replicating, and even surpassing, the human brain has become the social imaginary of AI systems.

This is the prominent imaginary of AI, that objective reflections of reality can be produced by machines which are based on reified metaphors which do not replicate the complexity of reality. The flaws of this idea are repeatedly demonstrated by the unethical and biased outputs created by AI systems. For example, in 2018 there was a scandal in the Netherlands when algorithms were used to try and predict fraudulent claims for childcare benefits, these systems were widely condemned. Despite this, in 2023 the Amsterdam government made the baffling decision to try and produce a new AI system which would check for fraud in welfare applications. However, this time things were to be different, this new system named Smart Check would follow all the best practices laid out in various AI ethics guidelines. Despite their best efforts, when it came time to test the system, it continued to produce bias mostly against non-Dutch men who were claiming benefits. The system was reweighted to attempt to manage this bias, and the system became biased against Dutch women¹⁶. As Amoore has argued, three years before the Amsterdam Smart Check project even began, such an outcome was predictable, “One could imagine a world in which the deep neural networks used in cities...are scrutinized and rendered compliant with rules and yet continue to learn to recognize and misrecognize people and to infer intent, to generate rules from the contingent and arbitrary data of many past moments of associative life on the city streets, to refine and edit the code for future uses in unknown future places” (Amoore 2020, 7). No matter what guidelines are put in place, when the reified outputs of AI are put back into material contexts, they produce biased outcomes. I would argue this is because, as AI outputs come back into contact with materiality, they lose their reified objectivity.

This contradiction is managed by AI advocates by arguing, as they did at AI Singapore, that more data, or more ethical guidelines will produce better outcomes next time around. Consequently, objective AI is deferred, both within its own probabilistic epistemology, and in its societal construction. The probabilistic nature of AI processing means that AI is perpetually one more piece of data away from producing an objective answer. Meanwhile, these ‘good enough’ probable answers produce

¹⁶ Guo. E, Geiger. G and Braun. J.C., (2025) “Inside Amsterdam’s high stakes experiment to create fair welfare AI”. MIT Technology Review. Accessed: 7 November 2025.

unethical and biased outcomes when they move from the reified space of computation to the contextual space of lived reality. However, this failure is often explained by AI's proponents as resulting from insufficient data, and the need for more ethics guidelines. As one of the architects of the Smart Check system in Amsterdam argued, "Perhaps it is also simply the case that it is not yet ... the time to use Artificial Intelligence for this goal¹⁷." AI therefore is stuck in a perpetual present, or in other words regurgitation, where its true ability, to predict the future objectively, is just one patch away.

DEFERRED FUTURES AND THE MUSLIM COMMUNITY

The relationship between Singaporean Muslims and the state is likewise defined by deferred futures. However, to understand the situation Singaporean Muslims find themselves in, it is worth briefly exploring the political history which led up to and motivates the anxieties of and about the state.

Since 1959, Singapore has been ruled by the People's Action Party (PAP) under a governance style widely referred to as competitive authoritarianism. The People's Action Party (PAP) version of Singapore history is linear and simple. Stamford Raffles arrived in 1819 marking the beginning of colonisation and modern Singapore. It remained a British colony until 1942 when Singapore fell to the Japanese during Second World War. The island returned to British rule after the war. Singapore then received independence in 1959 before establishing full self-rule in 1965 under the leadership of Lee Kuan Yew and the PAP. As Hong and Huang argue "a Martian with only the official script would think that there is only one political movement – the PAP; two important personalities in Singapore – Stamford Raffles and Lee Kuan Yew; and three dates – 1819, 1942 and 1965 – that are worth remembering" (Hong and Huang 2008 15). It is important to remember that this is the history of Singapore as written by the ruling party which skirts some uncomfortable parts of their history to support their political aims. However, by starting earlier and delving deeper into the colonial era it is possible to uncover a history which is much more tangled up with the region. This entanglement can help to explain some of the political anxieties of modern-day Singapore.

17 Ibid.

The colonial era, starting in 1819, was characterised by frequent changes in rulership of the Island. In 1824, Singapore became a crown colony until two years later when it joined the Straits settlements along with Penang and Malacca under the rule of the BEIC (Mutalib 2015, 49). The Straits settlements then became a crown colony again in 1867 incorporating Labuan in North Borneo. In 1895, British Malaya was centralised, with several states of what is now Malaysia and the Straits Settlements all being administered from Kuala Lumpur. British Malaya remained in place until 1942 when Japan invaded and took control of the peninsula. This defeat was one of the worst in British colonial history and “fore shadow[ed] the end of colonial dominance” (Wu 2010, 117). The decade following the reclamation of Singapore by the British in 1945 was certainly characterised by agitation against colonialism (Wu 2010).

In post-Second World War Singapore, pre-colonial connections with the Malay peninsula and Indonesia continued to be politically significant. In 1945 the Malay National Party (MNP) was formed to support the formation of a greater Malaya with Indonesia and Malaysia (Wu 2010, 121). A year later the British colony went in the opposite direction, giving partial self-rule to the Malay peninsula states but not to Singapore. This change and Indonesian revolution of 1945 heightened the agitation of Malay political groups (Wu 2010, 115). The increase in political action for a united Malayu in Singapore was also motivated by “anxieties that their dwindling population...might compromise the Malay position as ‘favoured sons’ of the British” (Wu 2010, 121). These anxieties would be prescient. In 1948 the British disbanded the MNP concerned by its political agenda. Then in 1954 the PAP was formed, a Chinese majority political party which would go on to dominate post-colonial Singaporean politics.

In 1953, the British announced a commission to organise Singapore’s first elections in 1955 (Mauzy and Milne 2002, 14). However, most legislative powers would not transfer to the resulting government but remain with the British. In those first elections the PAP only contested four seats, winning three. The Labour Front party won the majority of seats. The leader of the PAP Lee Kuan Yew argued that it was unwise to contest more seats in this first election because “History has shown that those who take office before Independence never take office after it” (Mauzy and Milne 2002, 15). Yet another prescient moment in Singaporean History¹⁸.

18 Labour Front lost all its seats in the 1959 election and then disbanded in 1960.

At the next elections in 1959, which would select a fully self-ruling government, the PAP won forty-three of fifty seats. Lee Kuan Yew (LKY) became the first post-colonial prime minister of Singapore. There have only been two prime ministers since Goh Chok Tong and LKY's son, Lee Hsien Loong. While the PAP was formed on a platform of socialist policies and decolonisation (Fong 1980, 14/21) after the 1959 elections the PAP would begin the political manoeuvre away from these goals towards policies which would cement the party's power and its centrist, pragmatist policies.

The British watched carefully as yet another former colony was taken over by an ostensibly socialist, decolonial movement (Hong and Huang 2008, 17). It is here that Raffles makes his re-emergence in the Singapore story, this time as a symbol. Singapore's Dutch economic advisor¹⁹ recommended that the Raffles statue remain in place as a gesture signalling an acceptance of the British colonial legacy (Hong and Huang 2008, 17). LKY agreed, and the statue remains in place to this day, a symbol of Singapore's unique post-colonial position, separate from but oriented towards the UK and the US.

Further, the party's socialist policies started to appear instrumental as well. The early PAP was a coalition between middle class, English educated, Chinese professionals and socialist Chinese educated trade union leaders. This coalition was seen as necessary to win over the "largely working-class electorate" (Hong and Huang 2008, 18). In February of 1963, 100 left wing PAP party members were arrested and detained on the grounds of being communist subversives. This mass detention effectively eradicated the party's socialist wing (Hong and Huang 2008, 18). Hong and Huang even suggest that the merger with Malaysia, which had happened just a few months earlier, was pursued because the conservative, right wing Malaysian government would not hesitate in detaining leftists. However, this merger with Malaysia would not last long.

In 1964, following the merger of Malaysia and Singapore, ethnic tensions boiled over into violence between Malay and Chinese Singaporeans. Accounts differ, but Malay nationalist groups from both Malaysia and Indonesia have been blamed for stoking the violence. Despite a multitude

¹⁹ Interestingly, this advisor was a Dutch economic advisor named Albert Winsemius sent by the UN as part of an Expanded Programme for Technical Assistance team whose role was to assess Singapore's potential for industrialisation. I point this out because of the obvious neo-colonial implications, of a European, sent by the UN, to advise a newly independent country to remain economically loyal to their former coloniser.

of other disagreements between the two countries, including around a shared currency²⁰, both Singapore and Malaysia point to these riots as the root of their separation in 1965. The riots also made race the “primordial fault line” (Hong and Huang 2008, 22) in Singapore. A common theme throughout Southeast Asia.

Consequently, Singapore arrived at full independence after its separation from Malaysia in 1965 with two major political anxieties. First, that the population of this new country was almost entirely made up of people with a migration background. Second, Singapore was surrounded by two much larger nations who shared a racial heritage with the country’s Malay minority. The assumption among the PAP was that few Singaporeans would have loyalty to the fledgling nation, and that the Malay minority would in particular feel loyalty to Malaysia and Indonesia because of their shared religious and racial heritage. For these reasons, the PAP moved to construct a Singaporean identity and to minimise the risk of Malay loyalties to their larger neighbours.

This prompted a policy of multi-racialism by the Singaporean state (Chua 2003) wherein the boundaries of racial identity are carefully managed. As Abdullah argues, multi-racialism differs from multiculturalism in that it “begins with the idea that ethnic and religious diversity is a problem that needs to be conscientiously managed” (Abdullah 2016). Therefore, Singaporeans are assigned a race at birth based on the four largest racial identities in the country, Chinese, Malay, Indian and Other (CMIO). Each of these identities is constructed not only as a racial category but is also tied to religious and cultural assumptions²¹. As Chua puts it “all Malays are supposed to be steeped in Islamic knowledge and cultural practices and every Indian in his/her religious linguistic and regional cultural traditions” (Chua 2003, 60). This alignment between race, culture and religion is so ingrained and promoted that many Singaporeans feel they can tell someone’s racial background simply by looking (Babcock 2023). However, whilst these racial identities are important in Singapore, Chua (1995) argues that they should be hyphenated with the Singaporean part first e.g., Singaporean-Chinese. With these identities established, the state argued that they should be kept separate to ensure that the racial violence of the 1960s is not repeated.

20 Orchard, F. 2021. “Second Separation” . Accessed: 1 December 2025.

21 It is this idea, along with the percentage make-up of the Muslim community in Singapore which leads to the conflation of Malay and Muslim in Singaporean society. However, as Tschacher (2018) shows there are many Muslims who are not Malay, and Malay who are not Muslim.

The pressure to conform to the Singaporean hyphenated identity was particularly intense for Malays because of their perceived divided loyalties. For example, this mistrust of Singaporean-Malays manifests in a reluctance to have Malays in positions of authority within the military, especially in the early years of independence. As Lee Kuan Yew argued it was a “tricky business for the SAF (Singapore Armed Forces) to put a Malay officer who was very religious and who had family ties in Malaysia, in charge of a machine-gun unit’ (Chua, 2003, 65). For much of the first forty years of Singaporean independence, Singaporean-Malays who were mostly Muslim were held in a deferred future where their racial heritage could ignite both violence within the state, as in 1964, or through war with the country’s neighbours. During this time, Singaporean-Malays were held as outsiders within the state whose integration could not be fully trusted.

However, it was another religious group who would first experience the PAP’s ire. In 1987, sixteen Catholic activists were arrested under the same legal mechanism as PAP members had been in 1963, the Internal Security Act (ISA). Under the ISA, these activists were arrested and accused of being communists who were using the Church as a front to undermine racial harmony in Singapore. These arrests prompted the introduction of the Maintenance of Religious Harmony Act (MRHA) which made it an imprisonable offence to say anything which would harm the religious or racial feelings of another Singaporean (Abdullah 2021, 19). Over the intervening years, this law would be used to curtail any discussion of race or religion in the Singaporean public sphere.

In 2003, the religious authority in Singapore MUIS introduced, at the behest of the state, the SMI (Singapore Muslim Identity). This document which listed ten attributes of a good Singaporean-Muslim citizen became the new deferred future for Singaporean-Muslims. So long as the SMI remains in place, the Muslim community is held in suspicion, watched by the state to see signs of failure to integrate and be good Singaporean citizens. Such failures to integrate can be as innocuous as the failure to say merry Christmas or refusing to eat with non-Muslims in the hawker centre (Abdullah 2017). All signs that one may be sliding toward extremism (Abdullah 2021). As Barr (2013) argues, this mistrust of the Malay and Muslim communities leads to tangible systematic marginalization in education and work outcomes²².

22 Similar, though inverted, situations occur in Malaysia and Indonesia, where the Chinese minority are often discriminated against.

Whilst here, and at several other points in this thesis, I have talked extensively about the conflation between Muslim and Malay, many of my interlocutors were in fact not Malay. As Torsten Tschacher (2018) points out, there are many non-Malay Muslims in Singapore including a sizeable Indian Muslim population. This is represented by my interlocutors, many of whom are of Indian descent. However, the history of bias against Malays remains important when writing about all segments of the Singaporean Muslim community. This is because of the conflation between Islamic faith and Malay ethnicity, which means that even non-Malay Muslims in Singapore are viewed through the lens of bias which has been historically levelled at Malays.

The result of the PAPs persistent discrimination against Malay-Singaporeans, and since 2001 Muslims more generally, is one in which their full participation in Singaporean society is deferred. While the AI future perpetually holds new promise in the immediate future, the Muslim community by contrast represents a risk to the racial harmony of Singapore. In fact, as this thesis will explore, because of the nature of AI as a regurgitation machine, AI reinforces and repeats the negative stereotypes about Singaporean-Muslims which have kept the community trapped in a perpetual present enforced by the state.

REGURGITATION, RISK, AND THE FORECLOSED FUTURE IN SINGAPORE

Both these futures, of the Muslim community and AI represent futures, which are about to happen, but which never do. AI is one patch away from being objective, its probabilistic epistemology just a bit more data from being accurate enough. Meanwhile, Muslim futures are defined by a racial violence which could occur any time, but which never arrives. So far, I have referred to these as deferred futures. However, throughout this thesis I rely heavily on Laura Bear's (2016) term "foreclosed" to describe these futures. Bear (2016) argues that time can be used to assert certain narratives which she calls 'episteme'²³ of the future. She suggests that these narratives about the future often come in the form of dangers. For example, a government might argue that immediate threats of violence, such as terrorism, are so pressing, that discussion

23 In Bear's article she also discusses time as techne, and time as ethic. However, whilst these are generative avenues for thinking about the construction of the future, this thesis is focused on narratives about the future, and how it is imagined.

of longer-term threats, like climate change can be deferred. Bear argues that if these narratives are repeated enough, and others are sufficiently suppressed, other narratives become impossible to imagine. As Collins argues, in such situations the constant churn of managing emergencies creates a presentism in which “the state of perpetual change is the same as perpetual stasis” (Collins 2008, 3).

There are two historically intertwined dangers which shape the episteme of future in Singapore with significance to this thesis. First, given Singapore’s small size, and lack of access to natural resources, there is a widespread belief in the “imperative to be smart” (Calder 2016) in which the nation, and its citizens must engage with new technologies. This imperative is one which I saw in my “day in AI” in the advertisement for AI training courses. This techno-anxiety (Chong 2021), in part motivates the belief in the deferred futures of AI in Singapore. Singapore needs AI technology to continue its financial success. The reliance on technology to remain competitive in the region is tied to the second danger of invasion from Singapore’s much larger neighbours Malaysia and Indonesia. This fear, as already shown, motivates the marginalisation and surveillance of Muslim identities in Singapore. Consequently, these two epistemes of AI and Islam, stem from the same imagined future risk of internal and external destabilisation in Singapore.

As I will go on to show, and have already argued, AI tends to reproduce what is within its data set. As we will see, LLMs (Large Language Models) like ChatGPT, can be described as a complex form of autocorrect. Consequently, it reproduces the most common narratives which already exist. This is what I refer to throughout the thesis as AI Regurgitation. In a Singaporean context then, it is likely that what ChatGPT produces will confirm the dominant episteme of the future in which the risk of internal and external destabilisation is emphasised. In the words of Bear (2016) they become foreclosed. This makes any other future, where Muslims are not construed as a risk, and AI is not construed as Singapore’s economic saviour, become hard to imagine.

In this thesis, I aim to show how these two foreclosed futures are not only parallel, but that the regurgitation of AI systems in fact reinforces and reifies the existing biases against the Muslim community. The use of AI by the Singaporean state has a significant impact on how the future is imagined by Muslims in Singapore.

REGURGITATING THE PRESENT, FORGETTING THE PAST: GOLDEN MILE TOWER

Just a few minutes' walk from Sultan Mosque in Kampong glam is an old shopping mall called Golden Mile. Completed in 1973, Golden Mile was a hub for the Thai community in Singapore with numerous Thai clubs, supermarkets, and restaurants. It was also the primary bus terminal for buses to Malaysia. Despite being described by some politicians as a vertical slum (Parliamentary debates 2006²⁴) Golden Mile holds a special and nostalgic place in many Singaporeans hearts. It is an iconic modernist building with one side devoted to a terrace of apartments, and the other a tower block of commercial buildings. Despite being an icon of the Singaporean skyline, Golden Mile was sold in 2021 to an investment group who planned to turn the tower into luxury flats. The residents were given until May 2023 to leave the building and either relocate or shut up shop for good.

In April 2023, I had just arrived in Singapore for fieldwork and joined a 'last look' tour of the building organised by the publisher Ethos books. Our group of around twenty walked through the halls of the now half abandoned mall. The Singaporeans among the group swapped stories. People remembered trips to Malaysia fuelled by Thai snacks, others remembered grandparents dragging them around the building for ingredients and some even recalled nights out in the karaoke bars which dominate the upper levels. By now most of the shops had been shuttered, but the sound of some final parties in the karaoke halls echoed through the building. On every shutter were signs reminding people that their last days were looming, some put the address where they would relocate to, but others simply said goodbye or thank you. Stretching across the shops which had already closed their doors for the last time was a red tape printed with the words 'Golden Mile Complex', but which had become torn and in places now just read 'go', ex and in one spot 'ex...ile'.

24 Singapore Government (2006) PARLIAMENTARY DEBATES Accessed: 6 November 2025.



Figure 6– Abandoned letterboxes at Golden Mile

Many of the shops within Golden Mile would survive in new locations. The façade of the iconic building would also be preserved²⁵. However, as the signs on each of the shops reminded, the community which once occupied this building was being dispersed, and with it their memories. Small old malls like Golden Mile are dotted around Singapore. My personal favourite is Peninsular Plaza, affectionally referred to as little Myanmar, which is just across the street from the modern Funan Mall. A friend took me there for dinner and I ate Burmese pickled tea salad for the first time. These little malls are a reminder of the communities in Singapore who do not fit into the monolithic categories of CMIO. They are also a reminder of a Singaporean past which was a little more haphazard, a little less technological, and maybe less corporate. Replacing these malls with luxury flats, and modern shopping complexes means instead of a diverse city with pockets of unique communities, Singapore becomes a homogenous mall filled with chains and corporate sponsors.

Stories of these places being closed, demolished, and dismantled are common. Ask a Singaporean and they will have memories of a mall that held meaning to them. It is not just malls, Ng Kok Hoe’s (2023) “they told

²⁵ Zhuang, J (2022) *Golden Mile Complex: Five Decades of an Architectural Icon*. National Library of Singapore. <https://biblioasia.nlb.gov.sg/vol-19/issue-2/jul-sep-2023/golden-mile-complex/> Accessed: 23 February 2026.

us to move” charts the loss of community when Dakota housing estate on Old Airport Road closed. In Esther Vincent’s (2021) essay “The Field” she reminisces about a patch of grass from her childhood now gone, and in “Kampong, Nation, Fire” Loh (2009) describes how Malay villages were dismantled and their residents spread across Singapore in the 1960s and 1970s. The constant urban churn of Singapore is another version of the presentism that motivates the pursuit of AI futures in Singapore. The sound of construction is a constant companion, and with each new building an old one and its memories must make way. Whatever does not get regurgitated in these new buildings, and these new technologies gets lost in the episteme narrative of Singapore’s urban, techno-future. Instead of a diverse future, built on a diversity of pasts with pockets of alternative visions which serve unique communities and individuals, it is replaced by a homogenous foreclosed future. The removal of memories within the city leaves less possibilities for imagining alternative futures.



Figure 7- Ex shop number 03-14 Golden Mile

CHAPTER OUTLINES: THE MANY FACETS OF AI REGURGITATION

The core question of this research is, “What futures are imagined by Muslims in a Singapore dominated by AI enabled technologies?” However, as we have seen AI systems have many facets, not all of which are tangible on a daily basis, and yet which impact the everyday. Consequently, in order to gain a full picture of how AI interacts with the lives of Singaporean Muslims, I approach AI in five distinct ways, as epistemology, policy, archive, imaginary and infrastructure. In Chapter 1, I further explain this approach to exploring AI in a diversity of ways. For now, I will explain how each chapter approaches one aspect of AI to create a partial composite image. Using this composite image, I argue that AI is a techne used by the Singaporean state to assert a particular vision of future, which regurgitates existing biases of the state towards the Muslim community. However, I ultimately conclude that these epistemes can be undermined by creating alternative narratives as they challenge the notion that only one story is possible (Bear 2016).

In Chapter 1, I explore how using co-laborative²⁶ methods allowed me to create contexts where my interlocutors could re-encounter AI and challenge its regurgitation. This approach allows me to acknowledge the power of these AI systems in the daily lives of Singaporean Muslims, and their importance in the decision making of government entities whilst also ensuring that I do not present AI systems as indisputable. AI and the Singaporean state have an enormous role in defining the future of Singapore’s Muslim community, but that future can still be challenged. This approach to AI, the future and the state is reflected in the structure of the remaining thesis.

In the Chapter 2 “AI Epistemology in Singapore”, I outline how we might approach AI as an epistemology which supports the State’s narrative about the future. In this chapter, I make two arguments about the Singaporean state’s imagined AI future. First, that AI is a twin concept in Singapore which can only exist in collaboration with Singapore’s Smart Nation initiative. As I show, the AI technologies of the state are reliant on large amounts of data which are primarily produced by the Smart Nation project. Consequently, the AI future of Singapore is tied to conceptions of the Smart City, namely that these projects are able to

²⁶ This spelling derived from Niewöhner’s article on ethnographic practices of collaborative labor, hence co-laborative which are described in depth later in chapter 1.

solve any and all urban policy problems. Second, I show that these ideas about the Smart City regurgitate the existing neoliberal ideals asserted by the PAP. Namely, that citizens can be reduced to data points which act in predictable ways. Further, I show that this perspective is tied to the governance approach of Singapore's ruling PAP which prioritises 'pragmatism' over ideology, and economic survivalism above all else. It is within this chapter that I show how AI is a way of producing knowledge which transforms citizens into computer readable data points to produce 'objective policy'. Not only is this approach to governance a regurgitation of existing governance paradigms, but it also reduces citizens to simplified versions of their identities.

In Chapter 3, I explore how State AI epistemologies get translated into the policy plans of MUIS. As the Islamic religious authority within the Singaporean state, it is the role of MUIS to govern the Muslim community through the paradigms of the state. This is done explicitly, for example, when government messaging on Covid was included in Mosque sermons. However, it is also done implicitly through the integration of AI into future MUIS religious policy. Consequently, whilst MUIS was initially resistant to the idea of digitalisation, and anxieties about its potential to fragment the religious community, it has embraced AI. As I will explore in this chapter, they have even begun development on an AI Fatwa bot which will be used to speed up religious decision making within the organisation. We see here how AI is a policy which is asserted by the PAP state and implemented by its statutory boards like MUIS. This chapter explores how MUIS engagement with state epistemology, circumvents engagement with citizens by closing down discursive space, and consequently regurgitates State ideology. Here we see how AI turns from an epistemology to a policy which must interact with the messy realities of governance.

For example, as I go on to show in this chapter, these AI technologies clash with the goals of MUIS as a religious authority. As this chapter demonstrates through ethnographic examples and the work of Alatas (2021) religious authority in Islam is drawn from the dialogical process of making the Quran relevant to the community. Due to the fact that MUIS reflects the policies of the wider government, such dialogue rarely happens. I further argue that this monological approach is entrenched by the organisation's approach to technology like AI. I show how in this case, AI is seen as a way to ensure MUIS' proclamations are seen as authoritative, objective positions allowing a reassertion of authority. Authority which,

in a digitalised world has become increasingly dispersed. Ironically, however, this bid for authority may in fact pull the organisation further away from dialogue and with-it religious authority.

The AI fatwa bot being designed by MUIS which is discussed in chapter three is built on top of ChatGPT software. Therefore, in Chapter 4, I attempt to return some discursive space to these religious processes by creating a context in which my interlocutors could respond to ChatGPT assertions. I did this by prompting ChatGPT to imagine the future of the Muslim community in Singapore then invited my interlocutors to annotate the text²⁷. This exercise revealed two things. First, that ChatGPT regurgitates biased ideas which show that it replicates state misunderstandings of the Muslim community and its concerns. Second, my interlocutors could easily spot and criticise these errors. It is this second fact which reveals AI as an archive. The ‘errors’ which my interlocutors noticed were often biased ideas which have been repeated by the Singaporean state about Muslims. This suggests that far from producing objective truths, what AIs like ChatGPT produce is the regurgitation of past ideas, including their biases.

However, most significantly for the overall argument of this thesis, what ChatGPT produced was a singular image of the Muslim community. This demonstrates once again AIs tendency to reduce people to less than the sum of their parts, merely data points, rather than containing multitudes. By creating a context in which my interlocutors could challenge the assertions of AI, I show that the “Muslim community” is a blurry concept and cannot be represented well by AI systems. By using annotation this chapter explores what we can learn when thinking of AI as an archive which regurgitates ideas from the past.

However, alternative representations of the Muslim community already exist throughout Singapore. In Chapter 5, I focus on the work of three Muslim artists whose work challenges both the fixed state notions of Islamic identity and the logics of the Smart Nation and AI. Through their works I explore how they resist the futures asserted by the state through AI and its infrastructures. In Singapore, a lot of art is censored by the state who use policy mechanisms to prevent public criticism. This censorship

27 The full prompt is explained and its limitations explored in chapter 4.

particularly targets work discussing religion²⁸, under the argument that these topics upset the delicate social harmony created by the state. This social harmony is in part achieved by ensuring different ethnic groups are well defined and separated. A process Abdullah (2016) calls “multi-racialism.” I argue that AI systems which perpetuate racial stereotypes, as argued in Chapter 4, and reduce citizens to their component parts, as shown in Chapter 1, intensify the racialisation of Singaporean Muslims. Not only this, but the panoptical effect of the Smart Nations sensors and cameras enhance systems of surveillance and censorship.

Despite this, artists find ways to skirt the authority of the state by ‘blurring’ their critique. As I explain in this chapter, artists find creative ways to ‘blur’ their work in ways which allow them to be unclear publicly. This approach allows them to avoid surveillance and simultaneously critique the racialisation of Singaporean Muslims by blurring the boundaries of the category Muslim. In so doing, they undermine the state imaginary that Muslims, along with other citizens, are merely data points. In this chapter I explore how AI enforces the codification of Singaporean Muslim identities, attempting to ensure their regurgitation and how Muslim artists blur the lines of these categories to resist the reduction of their identities.

The work of these artists described in chapter five, therefore, are an example of what Bear (2016) argues, that the foreclosed can be resisted by proposing alternative epistemologies. In Chapter 6 I focus on the alternative futures which emerge from alternative ways of knowing. To explore these alternative epistemologies, I begin with an alternative way of experiencing AI – sound. In this chapter, I explore, in discussion with my interlocutors, how we might interact with AI as an infrastructure, not just an output. However, the challenge, as explored throughout this thesis, is that AI is ephemeral, it's infrastructures are invisible and yet it is ever-present. We are encouraged to think of AI as the barest of interactions which we have with their interfaces, websites like ChatGPT or Dall-e. However, as shown in chapter 2, AI is on every street corner of Singapore, constantly intervening in urban life, if you know how to see it, or in this case hear it. Inspired by the data walks of Powell (2018) and the electrical walks of the artist Kubisch (2004) I walked with my

28 This is in part of the MRHA law; however, it is never completely clear where the line of discussing religion, and offending religions lands. This ambiguity is purposeful giving the state power to censor any speech it deems ‘offensive’ and therefore curtailing public discussions of race (Babcock 2023). For more on this see Chapter 5 “Act Blur, Live Longer”.

interlocutors through an area of Singapore which made them think about the future. As we walked, we explored the cityscape for invisible traces of AI using an electro-magnetic microphone. Simultaneously I would ask them to reflect on the future of Singapore.

Surprisingly, despite being surrounded by the electrical sounds of AI, none of my interlocutors imagined an AI or technological future. Despite so much of Singapore's future being contingent upon and imposed by AI systems, my interlocutors consistently imagined alternative futures. This chapter aims to show how AI is an infrastructure which surrounds Singaporeans. However, whilst we might expect that fact to enforce AI futures, when encountering AI infrastructures, Singaporean Muslims reached for other futures by engaging with the past. As with Golden Mile, my interlocutors remembered a Singapore which is now faded. A past not regurgitated by AI, but an alternative past which haunts Singapore's techno-future. Throughout this research my interlocutors told me they were not interested in an AI future. Whilst the state may assert the AI future as the only way forward, many of the Muslims I met in Singapore persisted in imagining otherwise. In my conclusion I explore how the futures contingency on the past makes this possible. I show how AI regurgitates the past in ways which reduce the complexity of peoples lived experience.

Between Chapters 2 and 3, 4 and 5 and 6 and the conclusion there are interludes. These interludes serve to draw the attention of the thesis back to the question of the future. Interlude one explores how the epistemology of AI within the Singaporean state, demonstrated in chapter two, produces particular visions of future. Interlude two looks at how the racial management of race within Singapore reinforces those visions of future. Finally, interlude three reflects on how these narratives can be resisted by imagining otherwise through reflecting on alternative pasts.

I do not believe that AI is a democratising force. However, the patent failings of AI systems to describe the Muslim community undermines its claims to produce objective, pragmatic knowledge. The way in which these systems foreclose futures, and datafy individuals therefore dissuades Singaporeans from accepting the futures proposed by the state. Instead, when I created contexts for my interlocutors to engage with AI through annotation and electromagnetic listening, they reached for other pasts not regurgitated by AI or perpetuated by the state. By reaching for these alternative Singaporean pasts, they blur the linear, singular nar-

ratives of time which are proposed by the state. By being in discussion with a plethora of different pasts, my interlocutors created space for a pluriverse of futures to be imagined.

This research was carried out as part of the NWO funded One Among Zeroes research project. Along with two other PhDs and two post-doctoral researchers we set out to study the discourses, practices, and imaginaries of Artificial intelligence in Singapore, Malaysia, and Indonesia. Across ten months of fieldwork in Singapore, I conducted over forty-five in depth interviews, four electromagnetic walks, and had my interlocutors produce ten zines about their imaginaries of AI and future. Alongside these elicitation activities, I conducted participant observation in which I attended public talks, AI training sessions, industry conferences, exhibitions and reading groups. These sessions were run by a number of actors in the Singapore AI space including student groups, artists, government departments including MUIS and Govtech, and private individuals. By the conclusion of my fieldwork period, I had become AI certified by the State-owned AI education and implementation company Singapore AI, I had been invited by MUIS to present on AI and Islamic authority and become an active contributor to a leftist library and art technology lab. Not all of these experiences are presented in this thesis, but they all contributed to shaping my understanding of AI, and Islam within a Singaporean context.

In particular, my approach in this thesis was shaped by relationships within the arts community of Singapore. I was able to meet and build a relationship with many Singaporean Muslim artists thanks to the help and support of Nurul Huda Rashid, who initially introduced me to several artists and art spaces across the city. For example, it is through Nurul that I came to meet, bani and Iskandar who appear in chapter 5. In the course of our collaboration Nurul was invited to speak at our projects conference in Jakarta on her work about the circulation of images of Muslim women online. This work, and its ties to the One Among Zeroes project led to her becoming the second post-doc of One Among Zeroes.

NOTE ON POSITIONALITY

Why Are You Interested in This?

In the Summer of 2023, I went to Singapore. A few days after my arrival I organised my first interview, a coffee meeting with an Ustaz, and

member of the Asatizah Youth Network (AYN) created by MUIS. Her day job is at one of the world's largest social media companies and in her spare time she counsels young Muslims online and offline about questions of Islamic faith. The interview went well-ish, although in my attempts to come across as a serious researcher I stuck a little too closely to my pre-planned questions, and perhaps created something of a stilted conversation. As we packed up to leave the coffeeshop which was across from her office she asked, "Why are you interested in this research?" It was not the first time I had been asked this question, and it would not be the last, because I am neither Singaporean nor Muslim, it is a reasonable question.

My answer to this question usually goes something like this. Originally, it was the topic, not the region which brought me to this research. For my undergraduate degree I studied religion at the School of Oriental and African Studies (SOAS) in London. It is one of the few universities in Europe where all its degrees focus on a non-European context, and it is one of the most politically left Universities in the country. It was this latter reason which originally attracted me to SOAS. Whilst there, I began studying Islam, mostly in minority contexts including the UK, something of a rarity among my peers. I was attracted to these studies in part because this was the era of "prevent" at UK universities. Prevent is part of the UK government's wider counter-terrorism policy named CONTEST. As part of this policy, prevent aimed to identify those at risk of becoming extremists by monitoring mosques, schools, and universities. This included my classes on Islam at SOAS, a school whose leftist student body was frequently protesting the UK government and its Islamophobic, anti-immigrant policies.

It was in this political milieu that I studied Islam as an undergraduate. I studied Islam within a curriculum which aimed to debunk the Islamophobic and racist assumptions which were common in the UK. Further, it was as part of a student body which linked discrimination of Muslims to other political struggles, including the use of Islamophobia and anti-immigrant sentiment as tools to divide the working class. Yet, despite this generally radical environment, SOAS remains an institution built on a colonial legacy. Founded during the First World War as a language school to train spies for infiltration into foreign countries, it remains to this day an institution which the British secret service regularly recruits from, despite the student bodies supposed anti-state sentiments. Despite its apparent commitments to radical politics, SOAS, like many universi-

ties, remains susceptible to political contradictions and failings. I was no different, despite learning about positionality, and the flaws of Malinowski's claims to have 'gone native' in anthropology classes, I often did little more than pay lip service to these ideas, and perhaps never truly struggled with the question of my own role within the historic, structural violences of racism and colonialism.

It was with all this surrounding me, that I attended a class in my final year about the role of the internet and British Islam. For the class we read an article which talked about the importance of CD-ROMS in the distribution of Islamic knowledge in the UK (Mandaville 2003). CD-ROMS! It was 2017. So, with the confidence of an undergraduate, I decided my thesis would address this gap in the literature. Consequently, I wrote about the role of what we now call filter bubbles on the strengthening of far-right, Islamophobic sentiments online. It was from this research that I became deeply interested in the ways technology changed long standing social structures like religion, and the public sphere. Therefore, when several years later I saw a PhD advertised which considered these questions but now in relation to the newest technology AI, I applied. However, I never really considered, during this time, my role within this research. Why was *I* doing this research? And how did that change the research I produced?

Why Am I Doing This Research?

Ultimately, that is what the question of my interest is about. Why should I be doing this research? In the beginning of this PhD, I argued that doing this kind of research can be a challenge for Singaporeans in Singapore. Censorship, as we will return to in chapter five, is common in Singapore and research on religion, which is seen as a topic that can cause social tensions, is generally discouraged. To do research on this topic, therefore, presented risks that my privileged position as an outsider with a British passport could bear. Furthermore, in my research proposal I wrote:

"In conclusion, British colonialism has a long shadow which is insufficiently addressed because of a general silence around the topic in the UK. To dismantle colonialism requires active engagement with that legacy and the logics which it perpetuates. As a British researcher I feel obliged to be involved in that process. To do this research without that intention would be re-creating colonial patterns of a White British person extracting resources. I aim to engage with my positionality in three ways, by engaging with Southeast

Asian literature, by positioning my theoretical work within the discourse of decolonisation and by foregrounding co-creation. All these approaches come with the Asterix that my British background and education mean that I have biases which can derail these attempts. Therefore, my positionality goes beyond this statement and must be something I consistently engage with throughout this project.”

I now consider this argument to be a bit condescending and not borne out by the realities of existing research in Singapore. Plenty of Singaporean academics find ways to conduct research about religion and even publish books and papers which critique the State’s approach to multi-culturalism. Walid Abdullah, whose work appears repeatedly in this thesis has written extensively on the marginalisation of Singaporean Muslims, Chua has written books critiquing the Singaporean state and its approach to religion since the 1990s and that is to name just two of the hundreds of academics from Singapore and the wider region working on these topics. This includes, to name just a few, Ezra Ho, Lily Kong Lily Zubaidah Rahim, Terence Chong, Farish Noor, Muneerah Ab Razak, Nurul Huda Rashid, and Loh Kah Seng all of whom appear in this thesis. Furthermore, as I will explore in depth during chapter five artists in Singapore find creative ways to skirt censorship and make their critiques of the state public.

Whilst I agree with myself from four years ago that the works of Singaporean scholars, should be and remain the theoretical backbone of this thesis, I no longer agree that my work, created as it is within a European University, by a British researcher, can offer much, if anything, to discourses on decolonisation. And certainly, cannot contribute to that conversation for a Singaporean, or Southeast Asian audience. Proof of that is the fact that, as my Singaporean friend who read this thesis put it, “Nothing you have written is a surprise to anyone in Singapore.” Singaporean scholars and activists do not require my insights to untangle the problems which are part of their everyday. Consequently, what I hope this thesis can provide is a compelling synthesis of my interlocutors’ insights.

What then is my argument today for engaging in this research? I would argue that it is worthwhile and relevant to me, because of what I learned at SOAS about how global struggles are interconnected. I want to demonstrate this through one example, the use of facial recognition in policing.

On December 11th, 2005, in the middle of the night, an oil refinery called Buncefield in my hometown of Hemel Hempstead blew up. No one was killed or injured, but the resulting fire was the largest in peace time Europe. Many people's houses were damaged by the shockwave which could be heard in France, and my school was engulfed in oil smoke. One of the buildings adjacent to Buncefield was the headquarters of Northgate Information Solutions a computer company, who among other things did data management for UK police. The staff of Northgate Information Solutions were transferred to their offices in Oxford and Peterborough. The company had backups of their data, but the fire caused a dip in their share price which precipitated their sale and rebranding in 2007 to Northgate Information Systems. Just over ten years later in 2018, the company would be purchased by Japanese Tech conglomerate NEC.

A year earlier in 2017, NEC entered into a pilot programme with the Singaporean Police to install their 90,000 police cameras, installed across the Island since 2012, with facial recognition software. By 2030 the number of police cameras is expected to expand to 200,000²⁹ and it was confirmed in parliamentary questions from 2025, that these cameras continue to use facial recognition software. Minister Shanmugam stated, "To the extent that there are CCTVs available where the crimes are committed, including petty theft, the Police may use facial recognition technology to try to identify the culprits, and follow up as appropriate" (Shanmugam 2025³⁰). This all came full circle when it was announced in early 2025, that UK police would begin using mobile facial recognition vans using software provided by NEC's UK arm³¹, formerly Northgate Information Solutions, who were given a 25 million government contract to provide facial recognition to the police³². This included a trial of the technology by Hertfordshire police, the police department of Hemel Hempstead³³.

This connection is coincidental. However, I would argue it is demonstrative of how governance by algorithms has become a globalised industry which can link seemingly unconnected things together. The export of Singapore's technological expertise is part of a wider policy within Sin-

29 Low, C (2021) "PolCam: Safeguarding Our Neighbourhoods" Accessed: 11 December 2025.

30 MHA (2025) "Whether police deploy facial recognition software to identify perpetrators of petty crimes" . Accessed: 11 December 2025.

31 Coincidentally, I started writing this section on December 11, 2025, the 20-year anniversary of the Buncefield explosion.

32 Borak, M (2025) "UK awards NEC \$25M facial recognition policing contract." Accessed: 11 December 2025.

33 Herts Police (2025) "Hertfordshire Constabulary. Live facial recognition software." Accessed: 11 December 2025.

gapore, where the nation positions itself as a test bed for tech governance innovation. As Kong and Woods argue, “parts of the island [have] become spaces for the incubation of new technological prototypes” (Kong and Woods 2018, 687). Singapore then forges connections, both with foreign governments, and multi-national corporations to export these innovations elsewhere. For example, in 2020 Singapore began a partnership on digitalisation with the Dutch government³⁴. A project which aimed to upskill the Dutch digital economy and share best practices. In this way, Singapore positions itself as a tech hub that can function as a technology-governance laboratory (Koay 2017) for other countries.

The insights gained from the application of these technologies then flow out of Singapore in all directions. As we saw, the use of police facial recognition software is being implemented into UK policing with insights gained by NEC in Singapore. However, this is far from the only example. NEC also sells its facial recognition software, via its local distributor Mitrg³⁵, to Israel. This technology has then been used to surveil Palestinians during the current genocide in Gaza³⁶ including the system tagging civilians as militants who have subsequently been targeted by the IDF. As Loewenstein shows, these technologies are then often marketed and sold in other countries by Israeli companies as “battle tested” (Loewenstein 2023, 11). This includes Singapore, who in 2023 signed a \$14 million 5-year contract with the Israeli digital surveillance company Cellebrite to collaborate with their police force³⁷.

Consequently, how Singapore implements new technology like AI into its governance processes has consequences for the future of governance globally. Some of the experiments with AI governance done in Singapore are likely to appear elsewhere in the following years if they do not already appear. It therefore behoves us to understand how these technologies are being understood and used in Singapore. Further, it is integral to understand how people are resisting these technological developments and imagining alternative futures which do not rely on them.

34 Kingdom of the Netherlands (2020) “Digitalisation & High Tech”. Accessed 11 December 2025.

35 Mitrg (2025) “Home Page”. Accessed: 11 December 2025.

36 Robbins-Early, N 2024 “How Israel uses facial-recognition systems in Gaza and beyond” Accessed: 11 December 2025.

37 Cellebrite (2023) “Leading Singapore Law Enforcement Agency Awards Cellebrite with \$14 Million Agreement for Cellebrite’s Advanced Extraction Solution” Accessed: 11 December 2025.

Often, these technologies are used first on marginalised communities. For example, the MATAR robot who we met in this introduction was first deployed to ensure migrant workers, many of whom are Muslim, remained in their dormitories during the pandemic, leading to high covid rates among the migrant community. As I will argue, the Singaporean Muslim community is one of the communities which has been marginalised, censored, and surveilled by the Singaporean state most since the 1960s. Consequently, they have faced state surveillance for over 60 years, and that surveillance has become increasingly backed by AI enabled technologies like facial recognition. Such developments have only just begun to be rolled out in the UK, including my hometown where police use of Live Facial Recognition officially begins in mid-December 2025, as I write this very sentence. I position myself within this research then as a student of what is to come with regards to techno-governance. In what ways is AI technology used and imagined by the Singaporean State? What do Singaporean Muslims imagine in response to the ubiquity of these technologies? And how might we imagine beyond them?

Research in Dialogue

To quote my supervisor Andrew Littlejohn upon reading the positionality section of my research proposal four years ago, “all this self-reflection is great, but what will it change about what you do?” I position myself within this research as a student in dialogue with my interlocutors. This position has two consequences for how I conceptualise this research and thesis.

First, I do not view this thesis as complete or authoritative. The ideas presented within this thesis are not the entire picture of how Singaporean Muslims think about AI. Neither is it a complete overview of how the Singaporean State conceptualises AI enabled technologies. Rather, it is a snapshot of a particular moment in the development of AI in Singapore, and how the people I met interacted with this emerging technology. In this way, I aim for my thesis to stand in contrast to colonial era manuscripts written about Southeast Asia, like Stamford Raffles “The History of Java”, or early anthropological texts like Malinowski’s “Argonauts of the Western Pacific” which made claims to complete understanding of other cultures and positioned their white European authors as the authority. Furthermore, I occupy this position in order to draw a distinction between the kind of qualitative, and partial claims of my work, and the comprehensive, quantitative claims made by proponents of ‘big data’ (boyd and Crawford 2012).

This thesis then is not the final word, but an opening for dialogue. As Brigitte Vassallo has argued in relation to her work, “I am here to put ideas on the table so that they can circulate, are modified, are worked on, or are thrown out” (Vassallo 2024, 19). I intend this argument not as a shield to criticism, but as an offering, especially for my interlocutors to respond and point out where this thesis goes too far, or not far enough. They of all people, living as Muslims within the Singaporean state will identify the blind spots, and failings of this thesis much more accurately than I ever could.

For my part I strive to engage in this research through dialogue. To this end I assume Freire’s definition of dialogue in which “dialogue cannot be reduced to the act of one person’s depositing ideas in another” (Freire 2017, 62). Under Freire’s pedagogical framework, students do not arrive as empty vessels to be filled with knowledge by an authority, but rather both student and teacher arrive with histories and expertise. Consequently “No one teaches another, nor is anyone self-taught. People teach each other, mediated by the world” (Freire 2017, 53). In practice, this meant that while I arrived in the field with ideas about what might be important with regard to AI, Islam, and Singapore, which I presented to my interlocutors.

I then followed the topics which they engaged with most strongly. As Freire describes this process, “the teacher presents the material to the students for their consideration and reconsiders her earlier considerations as the students express their own” (Freire 2017, 57). In this way, Freire argues that we cannot overcome difference, but instead use it as the grounds for dialogue. I will never occupy the subjectivity of my Singaporean Muslim interlocutors, but my position of difference can present my interlocutors with new questions. To this end I attempted to create contexts in which me and my interlocutors became “jointly responsible for a process” (Freire 2017, 53). Therefore, I created contexts in which they could bring their subjectivities to novel situations, something I return to in my methodology chapter.

Throughout my interviews I would ask about the use of AI by MUIS, and without fail, my interlocutors would relate this to several missteps made by MUIS during Ramadan 2023. For a long time, I could not see the connection between my questions, and their answers. However, in this thesis my chapter on the role of AI, centres on these anecdotes which were so central to my interlocutors understanding. Likewise, my chapter

on annotation stems from a comment made by an interlocutor on how he thought I should approach thinking about AI. Finally, in chapter five I draw the idea of blurring from the emic Singaporean phrase “act blur, live longer” which my interlocutors often used. Further, in this chapter I had the three artists it covers read the article and offer feedback on how to adjust my work to better represent their perspectives. The thematic focus of this thesis, therefore, represents the dialogue I engaged in with my interlocutors.

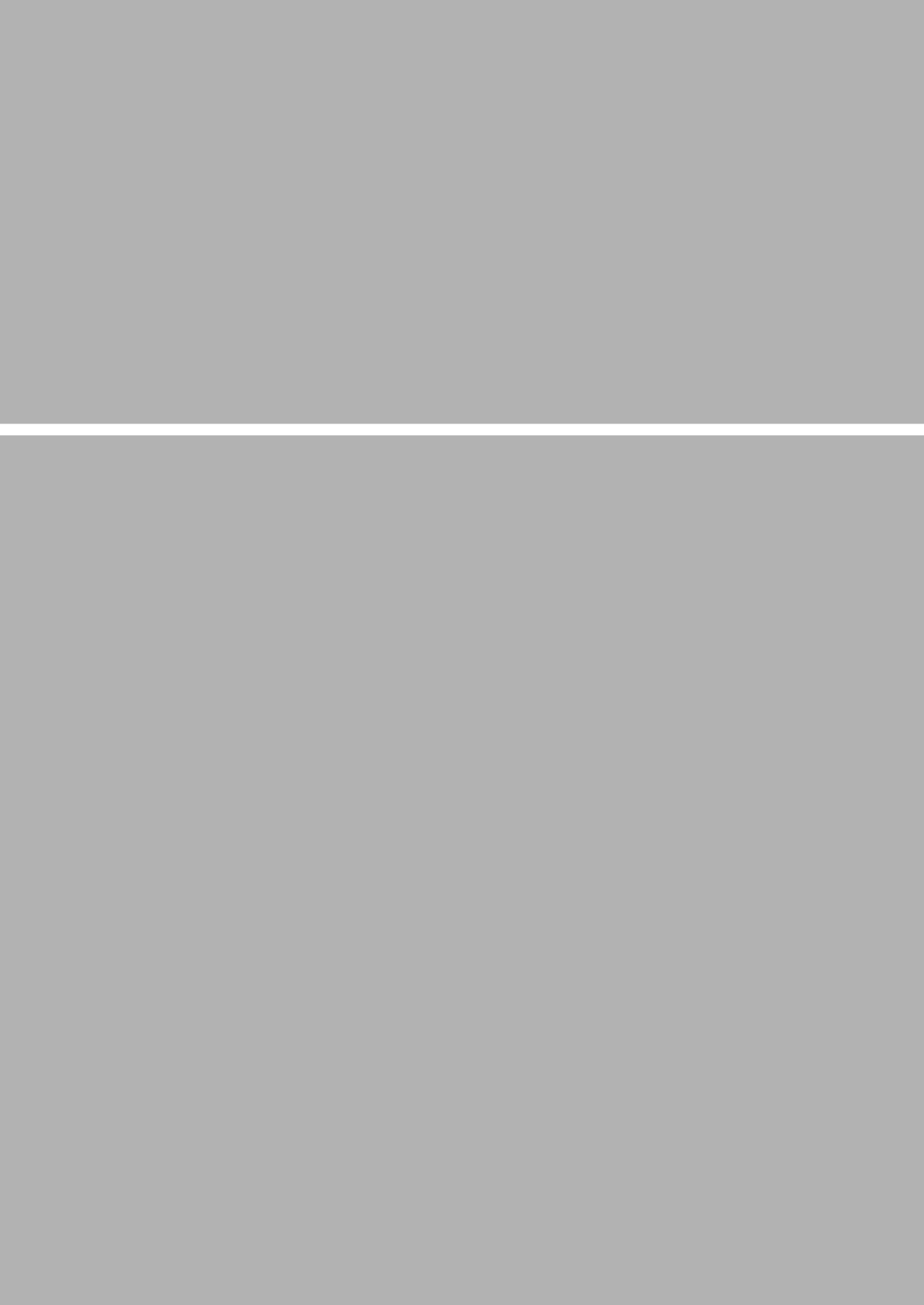
This discursive approach also has theoretical impact on how I approach Islam in this research. There has long been debate in the anthropology of religion about how to approach Islam, a tradition which finds diverse expression across its global community and yet expresses continuity across that diversity via ideas like the Ummah. This contrast has sparked an ongoing debate in which some argue for an ‘Islams’ interpretation of the faith where each community expresses an alternative interpretation of Islam (El-Zein 1977). This argument came as a response to earlier descriptions of Islam by anthropologists like Clifford Geertz (1968), which tended to flatten the diverse experiences of Muslims under one explanatory frame (Marranci 2008, 36). The advantage of an Islams approach is that it allows for a plurality of expression within Islamic faith.

However, this ‘Islams’ approach has also been criticised as recreating colonial conceptions of Islam which merged race and religion. For example, as Motadel shows, French colonialism invented “the notion of ‘black Islam’ or ‘Islam noir’” (Motadel 2014, 27) in opposition to the “white Islam” of the Arabian Peninsula. By contrast “Islam Noir” was argued to be a mix of local beliefs and Islam which colonial powers argued made it easier to rule and less fundamentalist (Motadel 2014). Accordingly, the idea of ‘Islams’ brings with it a judgement about a Muslim community’s ‘purity.’ This is a particular challenge in Singapore, where the state via MUIS expresses a singular Islam. By taking up an Islams approach in this thesis would be to suggest that my interlocutors who critique the state’s definition of the faith are simply not Muslim enough. A criticism that Muslims of all political and theological stripes are accused of in Singapore (Abdullah 2021).

Instead of either of these approaches, I approach Islam within this thesis as a discursive tradition in line with the arguments of Talal Asad (2009). Asad argued that whilst Islam was a single coherent tradition which could span across the globe and its diverse community, it was also a tradition

developed in conversation between followers, and between followers and their faith. Accordingly, Islamic traditions can differ both at the scale of community, and individual. On the basis of this argument, my thesis is not about the future of Islam like the projects of Sardar (2006), or Inayatullah (2005) who attempt to chart a course for the entire Islamic community but rather looks at the futures imagined by Muslims in Singapore which are in dialogue with their faith. As a consequence of my position, as a non-Muslim myself, this is as far as I feel comfortable to go. Therefore, like with the other themes of this thesis, I followed what my interlocutors considered important. That means I write here about Islamic theology if and when my interlocutors discussed it, rather than trying to artificially, and likely clumsily, lay Islamic theology over what they told me.

In conclusion, I will never occupy the subjectivity of my Muslim interlocutors. However, through dialogue with them, I aim to understand their perspective on the emerging challenges which AI technologies present. Whilst the Muslim community in Singapore has long been grappling with the issue of state oversight, and lately with AI enabled surveillance, this is a reality which is not confined to the borders of Singapore, as techno-governance becomes the policy de jour. Whilst the link between my hometown and the facial recognition software in Singapore is perhaps tenuous, and coincidental, it speaks to how these technologies move easily across state boundaries. What this thesis represents is what I learned with my interlocutors about how they imagine the future living under such techno-governance regimes.



Chapter 1

**Where is the Field? Co-laborative,
Composite Ethnography for the
Anthropology of AI**

INTRODUCTION

As my research project was focused on AI and governance in Singapore, I decided one good place to start would be with the Islamic religious authority, MUIS. During the planning phase of my PhD, I reached out to them and even managed to arrange an introduction meeting during my pre-fieldwork trip to Singapore. In the Summer of 2022, I took the bus from my hostel in Little India to their offices on Braddell road. The building was a modern tower block connected on its right side to a white mosque with a terracotta roof. I had arrived half an hour early, so I stood in the lobby where the organisation's SMI³⁸ (Singapore Muslim Identity) values were proudly displayed across the walls. Images of smiling Singaporean Muslims accompanied values like, "Gracious and contributive [sic] Muslims." There were more images, congregants stood before the mufti, young girls in tudung receiving diplomas and inspecting test tubes. These I surmised were the gracious, "contributive" Muslims. It felt like a mix of government office, corporate headquarters, and religious institution.

I was greeted in the lobby by the MUIS staff member whom I had been in touch with by email. We headed up in the lift, and I was ushered into a meeting room where another MUIS staffer, this one the head of online communication, was already sat. In that room, I was met with friendly interest but scepticism. They found my project interesting, but at the same time did not see what it had to do with them. AI in their view was sci-fi fantasy, twenty or thirty years away from being a concern within their work. Okay, I asked, in that case what were they currently concerned with at MUIS? The online communications officer explained that it was their role to disseminate the SMI, those values I had seen in

38 The SMI are: "1. Holds strongly to Islamic principles while adapting itself to changing context.
2. Appreciates Islamic civilization and history and has good understanding of contemporary issues.
3. Appreciates other civilizations and is self-confident to interact and learn from other communities.
4. Morally and spiritually strong to be on top of the challenges of modern society.
5. Progressive, practices Islam beyond forms/rituals and rides the modernization wave.
6. Well-adjusted as contributing members of a multi-religious society and secular state.
7. Inclusive and practices pluralism, without contradicting Islam.
8. Believes that good Muslims are also good citizens.
9. Be a blessing to all and promotes universal principles and values.
10. Be a model and inspiration to all." (MUIS 2006)

the lobby. This was a challenge in an online environment with so many opinions, not all of which lived up to the SMI.

They told me that their office used technology to counteract these non-SMI religious opinions in two ways. First, using data from Google, and their app MuslimSG, they try to identify topics concerning the Singaporean Muslim community. Using this data, they create articles which they post on Muslim SG. They hope these articles will encourage a response to these issues based on the SMI principles. This effort is supported by the central government, which informs MUIS of major policy changes ahead of time. For example, MUIS knew about the repeal of 377a, a law which had made being gay illegal in Singapore, months in advance so they could plan the messaging to the Muslim community. Second, they use search engine optimization (SEO) tactics to try to ensure that Singaporean Muslims searching for the answer to religious questions see MUIS articles first before ones from other countries. This was important, they explained, because they did not want Singaporean Muslims reading opinions from Malaysia, Indonesia, or further afield where cultural contexts differ. I wrote this excitedly in my notebook – what they were describing to me was playing the algorithm! Their use of SEO was them engaging with the invisible infrastructures of AI dependant technology. We agreed at the end of the meeting that I could join their online communication team for three months if I provided them with a proposal.

I left the building excited; I had found my field site. All I needed to do was write a proposal then observe their work for three months. Then I would get an insight into how MUIS, and the Singaporean State, encoded their religious perspective into social media through a relationship to algorithms. The only thing easier would be writing the methods chapter. What followed was a lesson in researching State institutions.

In my excitement I wrote the first draft of the proposal on the plane back to Amsterdam. A little over a month later I sent it to MUIS. Then, radio silence. I got no response to my emails for months. As the fieldwork approached, I got increasingly nervous. Finally, the week before, I received an email from my contact – they were busy but maybe we could meet. I arrived in Singapore to an email saying the meeting was cancelled, they were too busy. I proposed another time and that was cancelled too. Finally, we set a date that stuck, and I was greeted in the same lobby, with the same SMI murals, by the same MUIS staff member. Except this time the atmosphere was less friendly. They denied knowing about the meet-

ing we had the summer before, and that they had agreed to me working in their office. They denied ever receiving a proposal from me. They even denied that the meeting we were in had been pre-arranged. They told me that if I sent them my proposal by 12pm that day they would consider it, but I could not work in their office – maybe some interviews would be possible.

I realised it was already 10:30, my hostel was an hour away, and they had said I could not stay in their office to tinker with my proposal. PhD on the line, I ran to the bus stop, then ran from the bus stop to my hostel. By the skin of my teeth, I sent off the proposal in time. To no reply. I never heard from that contact at MUIS again. In the following months I rebuilt my network with other members of MUIS and even found myself invited to present on AI, intention and religious decision making at one of their internal conferences³⁹. Even then my relationship with these new contacts was on and off resulting only in a handful of dinners, or coffee meetings, and certainly no participant observation.

This story is emblematic of the problems that come from researching concepts which are often less than visible like AI, the state, and even the future. These problems are particularly heightened in the context of the competitive authoritarian Singaporean state (Abdullah 2016). In what follows, I outline why researching topics like the state and AI can be so difficult, including the ways in which people interact with digital technologies in general, how they interact with AI in particular and how the Singaporean state's reluctance towards transparency heightens these factors. Finally, I will show how the nature of future multiplies these problems, and their possibilities. After all, how each of us imagines the future depends on our unique relationship to the present. I will then outline how these challenges shaped my methodology. A methodology which combines participant observation, open interviews, and co-laborative experiments, into a composite of methods which when taken together, offer a partial view of how AI affects the way Muslims in Singapore imagine the future.

39 McGrail, J. (2024) "AI, Authority and Intention in Religious Decision Making" Accessed: 24 February 2026.

THE PROBLEM: THE STATE AND AI, SEEN AND UNSEEN

The State – Everywhere and Nowhere

Commiserating later with a Singaporean political scientist over tea, he recounted a number of occasions when MUIS staff had suddenly gotten cold feet about engaging with their research. The story of my unrequited relationship with MUIS will not come as a surprise to people who research the state anywhere, as social scientists have often struggle to access state institutions. As the sociologist Abrams wrote in the 1980s, anyone who tried to research the British state would have similar tales of state refusal. In fact, Abrams argues that this is not a coincidence, but a feature of the state. To Abrams a key characteristic of the state is its ability to define information and control access to it⁴⁰ (Abrams 1988). Those with access to information were part of the state, while those refused information were not. I will never know for sure what caused MUIS' sudden retraction from me. However, I can only assume that it was partly an assertion of state boundaries. If the state defines itself based on who gets access to information, then allowing a researcher inside its institutions would disrupt that process by ceding control over what can be seen. Of course, this position tends to create monolithic representations of the state, as understanding the nuanced thinking of the people who make up the state is difficult to ascertain when those people cannot be accessed.

However, access is not the only problem when researching the state. There are also deep theoretical challenges. As Brandel, Adorjan and Randeria (2024) argue early anthropologists were primarily interested in the study of societies that did not have official states. As a result, early anthropological theory defined the state in contravention to what was seen as a “lack” of state elsewhere. As a consequence, anthropologists frequently reified European states which were defined as singular, bounded institutions. Under such a construction, societies could be conceived of as being made up of state and non-state spaces (Scott 1998). However, as Brandel, Adorjan and Randeria (2024) show, this construction has since been unpacked as anthropologists began to observe the ways that

40 It could be argued that both Foucault (2008), and Scott (1998) make similar arguments. Through biopolitics the state creates a population over which it has sovereignty to act. By defining a population, states also tend to define a territory in which that population resides. As Scott (1998) argues in the opening of *Seeing Like a State*, this is perhaps why states respond so negatively to nomadic communities who cannot be tied to land over which the state has control. Here, as Abrams argues, the state defines its boundaries by defining information and who has access.

States spilled out of institutions into all parts of society. After all, government staff were simultaneously citizens. Suddenly, anthropologists saw the state everywhere and in every aspect of people's daily lives. In some ways, this also produced a monolithic representation of the state. With everything becoming part of the state, the term lost some analytical specificity.

Returning to MUIS and Singapore, we might see this shift in anthropological understandings of state through how MUIS can be defined. We could either see MUIS as an institution which exists within their office on Braddell road, or as existing within all the mosques, madrassa, and NGO organisations which it governs. We could then go further, what about the staff at MUIS? They are part of the Singaporean Muslim community as well, attending those same mosques, and other non-religious institutions. With technology we might go even further. The MUIS app, MuslimSG, is installed in the phones of many Muslim Singaporeans as it provides useful daily information about prayer times and mosque capacity. The state then resides, in part, through the phones of many Singaporean Muslims. As Brandel, Adorjan and Randeria (2024) argue, this presents the opposite problem to Abrams. If the state is visible everywhere, then does the concept lose analytical value? One approach, suggested by Brandel, Adorjan and Randeria (2024) is to refocus on the moments of interaction between citizens and the state.

However, this solution can be confounded by globalisation. As Gupta and Sharma (2006) argue the administration of states is often outsourced to companies in the majority world. Such outsourcing further expands where we might find the state by moving government functions outside the territory it governs. This leads to a situation wherein, for example, New York City parking tickets are processed by a company in Ghana (Gupta and Sharma 2006, 4). When such quotidian interactions move abroad and into the hands of private companies, the link to the state becomes blurry.

This kind of neoliberal globalisation is also at play in the roll out of AI within the Singaporean state. As this thesis will explain later, the Singaporean government has installed ChatGPT into the word processing software of all Singaporean civil servants. This means that when writing speeches and policy documents, Singaporean civil servants are interacting with a piece of software owned, built, and maintained by the American company OpenAI. This makes our ability to define the limits

of the state even more complicated. Not only are state functions being outsourced abroad, but those functions are conducted by opaque digital systems. When Singaporeans interact with the state, they might wonder whether that interaction was being mediated by software designed and built in the United States. It could reasonably be asked then whether the 'state' remains a useful analytic when its functions are so diffuse and its boundaries unclear. If I would have been granted access to MUIS, would that mean I had "seen" the state or just some aspect of it?

However, many still find it important to discuss the 'state' because despite its blurriness, the state continues to shape people's everyday experiences. That is certainly true for Singaporeans, for whom the state is a near constant companion. As already discussed, MUIS controls mosques and religious schools. However, the everydayness of the state runs much deeper than even that. 78,7% of Singaporeans live in apartments owned and managed by the state. The PAP has been in power as the governing party since 1959 before Singapore even existed in its current form. And every year, leading up to the national day on August 9th, military planes can be heard flying overhead. Consequently, whilst academic literature struggles to define the 'state' few in Singapore might share that confusion.

Therefore, the methodological challenge of studying the state is that it is simultaneously inaccessible and ubiquitous. Frequently state institutions refuse to allow researchers access to their processes, and therefore how exactly they function becomes unseen. Consequently, producing nuanced research about the operation of states is difficult when researchers must speculate from outside. At the same time, the state is everywhere, in a way which makes it almost banal. If anything can be explained by the role of the state, then this claim loses analytical power. Further, as explained earlier, relying on moments of state engagement can be confounded by the outsourcing of government functions.

Gupta and Sharma (2006) suggest that this bind can be overcome by exploring how the state represents itself. For example, by looking at public announcements, events, and policies. However, critics of this approach argue that focusing on state images results in monolithic depictions that are too coherent to describe the complex, messy realities of modern states (Thelen, Vettters and von Benda-Beckmann, 2018, 5). This thesis may at times represent the Singaporean State monolithically. In part, this is a result of access, however, it is also a choice to focus on how the

state represents its narrative about AI. My analysis gains more nuance by highlighting how my interlocutors within MUIS and outside MUIS respond to those narratives.

These issues have shaped my methodological and theoretical approach to the state, but as this section already suggested, problems of state visibility are also tangled up in technological visibilities and invisibilities. It is to these technological issues which I now turn.

The Digital: Ubiquitous and Invisible

In many ways, the difficulties of digital ethnography overlap with anthropologies of the state because the digital is similarly diffuse and banal. As Hine (2017) has argued, the boundary between online and offline has become increasingly blurry. We bring our offline lives onto the internet. On Instagram we provide our personal data to construct a curated version of our lives. At the same time, the internet has become a highly personalised space. Algorithms mean that online content is tailored and that your internet is different from mine. Further, we carry the internet around in our pocket most of the day, catching glimpses of it as we wait for a bus.

Consequently, there is no longer a 'cyberspace' where people go, as described in earlier digital ethnographies like Boellstorff's (2010) research on the online role-playing game *Second Life*⁴¹. The internet has become mundane and embedded in our daily lives in ways which make it invisible. For example, when I met with MUIS staff, they denied having anything to do with AI, and yet, spent much of their working day negotiating with algorithms in their attempts to wrangle search engine optimisation. The ubiquity of the digital made its intervention in their daily lives invisible. In fact, cyberspace is so ubiquitous that people who are 'chronically online' do not talk about cyberspace but meatspace – that being the real world. The result is that our engagement with the digital is everywhere, and yet at times not even visible to ourselves.

This state of affairs has been amplified by AI technologies as interactions with AI systems are particularly ephemeral. People might spend only a

⁴¹ Perhaps there never was a cyberspace, and early ethnographies of online spaces made the mistake of placing these communities outside of space. This is similar mistake of early ethnographies like *Argonauts of the Western Pacific* (Malinowski 1922) which placed observed communities outside of time, constructing them as pre-modern. In both cases, these communities are perceived as discontinuous with the rest of human society, which is of course not the case.

few seconds constructing a prompt for ChatGPT before receiving their answer. However, simultaneously, the databases Chat GPT uses are made up of data scrapped from the internet, the same data which is posted by people on social media. Whilst people are somewhat aware of how they co-construct their social media algorithm; the scrapping of internet data is largely done without their knowledge and consent. Therefore, our interactions with AI are embedded in other digital media interactions in ways which are hard to perceive. Conscious engagement with AI, both in Singapore and elsewhere, is only the tip of the iceberg.

The pervasive influence of AI can be seen in how these systems are reshaping human writing. For example, the nonsense term ‘vegetative electron microscopy’, which was created by AI as the result of incorrect data scrapping, has appeared in several peer reviewed science journals (Joelving 2025⁴²). Whilst some of these papers have been retracted, the publisher Elsevier has stated that it is content with the wording. As Vickers and Allado-McDowell (2020) argue AI is an ouroboros, constantly creating and being created in conversation with content produced by humans online. It is for this reason that many descriptions of AI, in books (Elliott 2019), at conferences, and in this thesis begin by showing how AI intervenes in daily life. Without such illustrations, AI can seem like a far-away sci-fi idea, even though it is already asserting and reshaping our daily lives.

Consequently, focusing just on the moments of conscious engagement with AI would reveal only a fraction of its influence. AI is a sprawling network of infrastructure which spreads around the world and involves the labour of millions (Estampa 2024). The wires, cameras, sensors, and data centres which facilitate the flows of AI data surround us. In Singapore this is particularly evident. Government AI systems are built on top of Open AI’s ChatGPT and are bolstered by data extracted by Singapore’s Smart Nation project. As a result, Singaporeans interact nearly daily with AI, not only online but as they walk through the streets where data sensors track (and extract) their habits. Under Latour’s (2002) definition this makes Singaporeans part of a nationwide, perhaps even worldwide, cyborg.

42 Joelving, F. (2025) As a Nonsense Phrase of Shady Provenance Makes the Rounds, Elsevier Defends its Use, Retraction Watch. Available at: <https://retractionwatch.com/2025/02/10/vegetative-electron-microscopy-fingerprint-paper-mill/> Accessed: 3 April 2025. The word vegetative was found to be in a column opposite the words electron microscopy which AI picked up as one phrase from two unrelated sentences.

In the context of this research, Singaporean interactions with AI remain frequently less than visible. Data centres are not listed online, and when you do find them, they are unmarked anonymous buildings with warnings that armed guards patrol them. The data sets used to empower government AI systems are controlled by its GovTech office (GovTech 2024⁴³). This data is given only to Singaporean government departments and select SEOs, who use it to make products for industry. Intel's former in house anthropologist calls for an ethnography of these big data custodians (Bell 2015) but such a project seems unlikely in Singapore based on my experiences in the field where accessing government systems is near impossible.

Furthermore, even if such an ethnography of data management were possible, it is well known that AI systems remain somewhat unknowable because deep learning processes are a black box (Seaver 2021, Couldry and Mejias 2019, Aradau and Blanke 2022, Joque 2022). Even the custodians of AI do not have all the access to the 'reasoning' these systems employ.

Constructing the Future: Between State, AI, and Community

Futures are often constructed in the present and are often defined and imposed by those with power (Pels 2015). Yet the future can still come as a surprise. Whilst the MUIS staff who I spoke with felt that a Muslim AI was a far-flung future, their colleagues were just months from beginning just such a project they called an AI Fatwa Bot. Even though institutions like MUIS hold sway over how the Muslim community in Singapore imagines the future, their imaginings do not represent all Muslims in Singapore, who are neither homogenous, nor entirely disparate. Whilst MUIS stakes a claim over what a Singaporean Muslim should be through the SMI values found on the walls of their foyer, the reality of what Islam means is far more complex. Something which is also represented by the multiple and at times contradictory opinions of those working within MUIS⁴⁴.

In a 'traditional' ethnography, an anthropologist would go to a bounded field site, or several sites, to observe their object of study. However, all of the difficulties described above mean that no such site existed for this research. Both the State and AI are concepts which Singaporeans interact with on a daily basis, and yet, they are opaque. In both cases, it is hard

43 GovTech SG (2024) Our Role, Government Technology Agency. Available at: <https://www.tech.gov.sg/about-us/what-we-do/our-role/>. Accessed: 3 April 2025.

44 Something I return to in Chapter 3 of this thesis.

for researchers to gain access to their inner workings. Even if access were possible, both represent systems which now sprawl outside of a defined space. In simple terms, there was no room labelled “Singaporean Muslims imagining the future through AI” and perhaps if there were, I would not have been granted access. Yet, despite all this, both the state and AI continue to have profound effects on the futures of Muslim Singaporeans. This raises the methodological question of how to understand, or even observe, AI’s impact on the everyday life worlds of Singapore’s Muslim community.

In one of my final days in Singapore, I sat with a friend at a zine shop in the west of Singapore and recounted the story which opens this chapter. I lamented that my fieldwork would have been much simpler if I could have spent three months at MUIS observing their work, than using a composite of methods to build my understanding. They agreed it would have been easier, but I would have only seen what MUIS wanted me to, and only from one perspective. This comment has shaped how I think about my methodological approach, in which I use a composite of methods to observe different aspects of both AI and the state. In what follows, I will explore the methods I used during my fieldwork to make the blurry concepts of AI, and state, sense-able if only partially.

Participant Observation: AI-enacted State Representations, and Blurry Interlocutors

As I showed, Gupta and Sharma (2006) argue that the outsourcing of government functions can make it hard to observe the state through its interaction with citizens. To counteract this, they suggest focusing on state representations. In Singapore, much of the work of representing the governments approach to AI has been outsourced to AI Singapore, an AI company partly owned by the government. As we will return to, AI Singapore is responsible for educating civil servants, and the public on AI. Their basic courses are required for everyone in government but are also accessible to the public. In Chapter 2 of this thesis, I attempt to unpack how the Singaporean government, through AI Singapore, understands AI. My aim was to explore how Singaporeans, especially those within government offices are expected to understand the functions of AI. I called this the epistemology of AI.

To gain an understanding of the government’s AI epistemology, I attended two courses which aimed to prepare participants to use AI at work. The first course was an online module with a final exam, whilst

the other was an in-person event held on the NUS (National University of Singapore) campus. By attending these events I was able to gain an understanding of how the government conceptualises AI. Alongside these training sessions I attended public lectures from the Infocomm media development authority (IMDA) who are a statutory board of the Singaporean government whose role is to develop the digital economy in Singapore⁴⁵ (IMDA 2016⁴⁶). GovTech, develop and manage government AI systems and several conferences organised by universities and businesses. The aim of these participant observations was to explore AI as a Singaporean state narrative.

Of course, my lack of access limits my ability to understand how AI is integrated into government processes. What goes on behind the scenes is likely more complex than what is presented publicly by the state through intermediaries. This is precisely the argument of Thelen, Vettters, and von Benda-Beckmann (2018) who argue that focusing just on state images flattens the messy reality of State action. It is on this ground that Tania Li critiques the work of James Scott. In her article “Beyond the “state” and failed schemes” (2005) she argues that we should go beyond the question of what schemes the state imposes, and instead ask “What do schemes do? What are their contradictory, messy, and refractory effects?” (Li 2005, 391). If my participant observations at AI Singapore events reveal AI as a scheme of the state, my open interviews with MUIS staff aim to ask what the states AI narrative does and produces.

To approach this question, I needed to rebuild my relationship with MUIS. I was interested in how MUIS was implementing the state’s grand schemes around AI. However, my access to the organisation was limited after their retraction from my research. As a result, I turned to snowball sampling. I began by reaching out to several members of the Asatizah Youth Network⁴⁷ (AYN). This group of Ustaz (religious teachers) is not employed by MUIS, but they do frequently interact with them. The AYN was formed as a way for MUIS to disseminate government messages online, without appearing in these spaces as the state. MUIS staff would ask members of AYN to post messages on their personal social media profiles

45 IMDA (2016) Architects of SG’s Digital Future, Infocomm Media Development Authority. Available at: <https://www.imda.gov.sg/>. Accessed: 3 April 2025.

46 Alongside, this role they also administer the Protection Against Online Falsehoods Act, which has been controversially used to silence critics of the Singaporean state. Targets included the independent news outlet Jom which was reporting on corruption within the PAP. . Accessed: 3 April 2025.

47 Muslim SG “Asatizah Youth Network”. . Accessed: 16 February 2026.

on topics the government deemed important. In return, AYN members would tell MUIS what topics had been trending online. Members of the AYN became key interlocutors for my research as people who existed in the blurry space between state and non-state (Li 2005). As a result, they were able to discuss how MUIS were thinking about and implementing AI into their governance.

Further, several members of the AYN also work at MUIS including members of the Research Programme in the Study of Muslim Communities of Success (RPCS). The RPCS is tasked with understanding the role of AI in the governance processes of MUIS. Through open interviews with members of RPCS the research arm of MUIS, and Ustaz from AYN, I explored their proposed implementation of AI – the AI Fatwa bot. This informs how I answer the question of what the States AI narrative does within MUIS and what messy contradictions that produces within MUIS itself. In particular, this chapter explores why MUIS wants to implement AI at all. For this analysis, I draw on interviews with members of the RPCS who are firmly within MUIS, AYN members who exist somewhere in the blurry space between MUIS and the Muslim community, and Singaporean Muslims observing the institution from the outside. By meeting with these groups, I was able to understand how MUIS is transforming the general government technology policy into imaginaries for governing the Muslim community.

However, as I pointed out earlier, the Muslim community is not homogenous in Singapore, or anywhere else for that matter. Consequently, I sought alternative views. Whilst MUIS are tasked with implementing AI as defined by the State, other actors within Singapore contest these ideologies. Primarily, these actors come from the artist and activist circles and are represented in the chapter “act blur, live longer” where I explore how their work blurs the definitions of both Islam and AI as defined by MUIS and the state. Through interviews, and experiencing their works firsthand, I came to see their art as a bridge between the clear AI definitions of the state and speculative counter-imaginaries co-laborative experiments. These ideas of AI and future are blurry, they deal directly with the realities of State policies, but at the same time undermine them, opening up space for imagining otherwise. These perspectives remind us that whilst AI is an infrastructure with tangible physical aspects, it is also a cultural artefact with infinite possible meanings.

By observing how these three groups, the state, MUIS, and artist/activists, define both AI and future, we are able to create a partial composite image of the normative position in Singapore. State run public events demonstrate how AI is represented to the Singaporean public. The perspectives of MUIS staff, and AYN Ustad allow us to see how these state ideas are transfigured into the context of governing the Muslim community. Finally, how Muslim artists resist these ideas point to the implicit exclusions of these definitions which would never be described in the glossy presentations of the state. However, these perspectives still focus primarily on the parts of AI we can see, namely what they produce. The outputs of AI certainly impact how Singaporeans imagine the future. However, focusing only on the images of AI produced by the state, and interactions with AI by MUIS prevents us from understanding how AI shapes the kinds of futures which are possible to imagine. To explore these aspects, I employ a method of co-laborative ethnography.

Making the Invisible, Visible: Composite and Co-laborative Ethnography

Both the state and AI create are a pluriverse of fields. Each person with their unique network of influences creates their own relationship and understanding of the state. Likewise, the shifting data and algorithm of generative AI in theory spawn new fields with every prompt. Even the infrastructure of wires and data centres bring with them electromagnetic fields which could be considered ethnographic fields. The challenge, therefore, was not in finding these fields, as they may be found on any given street corner, but in making these fields legible and meaningful to my interlocutors. As Aouragh (2018) points out, the internet is a commodity, a system, and a cultural artifact. I would argue, likewise, that AI is an epistemology, an infrastructure, an archive, and a policy. In order to research it we need to use a composite of methods to reveal its various facets.

In her ethnography for the internet, Hine (2017) argues that we should treat digital ethnography as a landscape. Ethnographers should walk through life with your interlocutors and observe the moments when technology intervenes. However, as Hine argues, these moments can be hard to observe. This is particularly true of AI: as described above my interlocutors often walk through fields and have imperceptible AI technologies intervene in their lives. Consequently, rather than experience my interlocutor's everyday life worlds I sought to construct "spaces or

processes that allow anthropologists to try out and experiment with different worldings” (Niewohner 2016, 14).

Niewohner refers to this approach as co-laborative ethnography, which comprises of creating experiments in which interlocutors can bring their existing reflexivity to new contexts. By using Niewohner’s approach, I introduced my interlocutors to new experiences with AI to which they could bring their everyday knowledge, rather than following them through the everyday where they often only fleetingly engage with AI. Ethnography is a collaborative process, and anthropological insights rely on collaborators who have a complex, lived understanding of their context. My aim, therefore, is merely to bring my interlocutors’ subjectivities to the new context of AI which they do not usually experience. The job then of the ethnographer is to move across these contexts and understand what to do with the surprising answers which emerge (Ford and Ulrich 2021). With this in mind, I created two experiments which attempt to create surprising new contexts, and draw attention to the ever present, though invisible fields of AI.

Co-laborative Experiment 1: Electromagnetic Walks, Making AI Infrastructure Tangible

The first co-laborative method is what I call electromagnetic walks. I asked my interlocutors to take me to a place in Singapore which made them think about the future. I would then attach a clip microphone to their lapel and hand them an electro-magnetic microphone. This microphone would allow them to experience electro-magnetic fields as we passed through them by transducing them into sound. This contrast, between a place they knew well, and this strange experience of a field which they could usually not perceive remade the city in ways which allowed them to engage differently with questions of AI and future.

This method owes much to Powell’s (2018) data-walks wherein participants were encouraged to walk through the city and notice the physical traces of data infrastructure which they usually ignored, such as cameras. However, the electromagnetic walks I conducted went beyond the visible but ignored, and into the invisible infrastructures of AI. They therefore also replicate the methodology of Kubisch’s (2004) electrical walks. In Kubisch’s electrical walks she gave participants electromagnetic microphones and asked them to collect the sounds of different electrical objects. Kubisch then uploads these recordings to an online archive of electrical sounds from cities around the world. However, unlike Kubisch’s walks,

the aims of my walks were less archival (Kubisch 2020⁴⁸) in that the aim was not to identify and categorise the electrical objects we encountered. Instead, the aim was to create a space of encounter between my interlocutors and electrical fields so that they could consider the influence of digital infrastructures, on their daily lives, and on their imagined futures.

I chose to use sound as the mode for making AI tangible because of how microphones have the ability to replicate and dislocate sound from its source (Chattopadhyay 2012). As Chattopadhyay (2012) argues, before the invention of microphones, the only way to hear something was by being near its source. However, as he remembers, even growing up in a remote village he could hear the London Symphony Orchestra because it was recorded by the BBC and transmitted over radio by the World Service. The orchestra in London had been dislocated from London and transported. Similarly, when recording using electromagnetism, it is possible to dislocate sources of electromagnetic waves from the places they occupy. For example, when walking with one interlocutor down a road, we were able to “hear” the electromagnetic waves produced by a wire buried in the concrete. By using an electromagnetic microphone, I am therefore able to dislocate AI infrastructures from their hiding places, inside anonymous buildings, and under the ground, and present them to my interlocutors. As we walked and encountered these sounds, we collaboratively decided what the sounds we encountered mean. In this way, as Littlejohn (2022) argues, these recordings have less to do with representing reality as it is and instead enable exploring the unique ways that people experience place through sound.

An example of this would be Charette, Lima and Elliott’s (2022) work which reconstructs the sonic experience of people with serious head injuries. In these works, they do not literally recreate the sonic worlds of their interlocutors, but rather create an aural environment based on descriptions of their experience. This audio therefore creates a speculative space, exploring what their sonic worlds might look like as a methodology for understanding the daily lives of people with head injuries. For example, in one composition they recreate the experience of one man whose head injury made it challenging to listen to multiple people at once, by creating an overwhelming soundscape that recreates his experience of sensory overload. Of course, this is not a literal recreation of the man’s experience, but it gives us a sense of his aural world. However, the

48 Kubisch (2004) *Electrical Walks*, Electromagnetic Sounds archive . Accessed: 16 February 2026.

sonic walks I conducted are unlike Charette, Lima and Elliott's (2022) work, in that my recordings do not reconstruct the lived aural experiences of others but disrupt my interlocutors every day. The aim of my electromagnetic walks is to co-construct an explanation of what the sounds we encounter mean.

It is this final part, where we work together towards an understanding of what these sounds mean, that make it a co-laborative ethnographic experiment. As Niewohner states "co-laboration... is not about a joint opus as in cooperation, but about a shared process of labour" (Niewohner 2016, 10). We walked through electromagnetic soundscapes together, to try and understand AI as an infrastructure which envelops us all, and how that fact shapes imaginings of the future.

Co-laborative Experiment 2: Annotating ChatGPT

The second co-laborative experiment was annotating ChatGPT generated texts. Before entering the field, I asked ChatGPT to imagine the future of the Muslim community in Singapore⁴⁹. What ChatGPT described seemed heavily inspired by the SMI, the ten principles for being a good Muslim in Singapore promoted by MUIS. A Muslim community that was more active and visible in Singapore. With this text in hand, I asked each of the interlocutors I met to annotate the text. In these annotations I asked them to point out mistakes in the text, problems with its ideas, and the ways it conflicted with their vision of the community.

As described above, the data base which many generative AI, like ChatGPT are built on, is scrapped from the internet. It contains a wide corpus from the web including Reddit, scientific papers, novels, news articles, and more⁵⁰ (Heaven 2025). These models use the collected texts to make approximations of human written texts by predicting the most likely words to be used in sentences. However, these models cannot accurately cite the source of their work because they are simply not designed to do so. Consequently, we can think of AI like ChatGPT as an enormous and opaque archive of digitised texts. Whilst people do not commonly think of ChatGPT's database as an archive, however, I am using this frame to create a surprising new context to which my interlocutors can bring their subjectivity.

49 The prompt will be further explained in the chapter "The Future will (not) be annotated".

50 Heaven, W (2025) OpenAI just released GPT-4.5 and says it is its biggest and best chat model yet. MIT Technology Review. Accessed: 12 January 2026.

As many scholars of the archive argue, archives have the power to enshrine truth via inclusion, and exclusion. When a text passes into an archive it becomes fact, whilst texts excluded from the archive are silenced (Carter 2004). Archives historically have required extensive resources to gather and to maintain their contents. Whatever the archive contains must be collected, and preserved, both of which require money and access. This means that archives are frequently projects of the powerful. For example, as Stoler (2009) shows colonial administrators were prolific archivists. Furthermore, because, as Derrida argues, archives are just a sliver of a sliver of the whole, those assembling archives do so according to “socially constructed, but now naturalised frameworks that determine the significance of what becomes archives” (Swartz and Cook 2002, 3). Archives therefore represent what is considered important and valuable by those with the resources to operate them. As Carter (2009) claims, archives are spaces of power used by the powerful to preserve memory.

Therefore, those with power are able to ensure their perspectives appear in the archive while counternarratives are often excluded. Consequently, ideas of the status quo are able to proliferate within archives. For example, colonial archives tend to preserve the colonial and racist views of colonial administrators who constructed them. This influence can sometimes be subtle. For example, the Artist Alexandra Bell shows how newspapers replicate colonial, racist ideas from the archive by replicating their neutral tone (Bell 2019⁵¹). As Bell points out neutrality allows the status quo of racist ideas to proliferate in the media representations. She demonstrates this by annotating newspaper articles to expose the implicit racist ideas that are recreated. Swartz and Cook (2002) describe this method, of annotating the archive as reading against the grain, in which historic records are read for their absences. As Chai (2021) argues when discussing Bell’s work, Bell’s annotations wound the original text, proving that it is vulnerable and not as objective and factual as it presents. In this way, annotation is an act of asserting power (Kalir and Garcia 2021, 32). By identifying the gaps, it is possible to expose biases in the archive.

By seeing AI systems like ChatGPT as an archive, we can approach their databases differently. Frequently, these systems are unseen, meaning that we cannot know for sure what is contained within them. Further, unlike the examples of archives in which replication of existing ideas is sometimes an implicit process, LLMs produce text which is an average

51 Bell, A (2021) Counternarratives. . Accessed: 12 January 2026.

of its data set. Consequently, the text produced by AI systems is a literal regurgitation of their archives. Further, as we have seen the language that AI generates passes into authoritative sources without much contestation, as in the case of the nonsense term ‘vegetative electron microscopy.’ Consequently, the outputs of AI systems are sometimes treated as authoritative, with similar power as the archive to transform texts into ‘truth’ as we will see in the states application of AI in Singapore.

It is for this reason that I chose annotation as a method to introduce my interlocutors to AI in this new context. The voices of Singaporean Muslims have long been side-lined in Singapore. This is expressed in the textual archive throughout Singapore’s history, from political speeches to newspapers and even on the walls of the MUIS foyer, where they are exhorted to be ‘contributive.’ As if they do not contribute to Singapore. As Kalir and Garcia argue “texts are technologies that have expressed power across societal scales for centuries” (Kalir and Garcia 2021, 130). These texts in Singapore have marginalised the Muslim community. Barr (2013) argues, for example, the perceived failure of Singaporean Muslims to integrate, as intimated by documents like the SMI, have been used as a pretence to exclude the Muslim community from government resources. As Barr (2013, 111) shows this has led to “systematic discrimination, particularly but not exclusively in education and scholarship systems and in the all-pervasive military and civil service”. For example, the Presidents Scholarship, a university academic scholarship awarded annually by the government, was only won by a Muslim student twice between 1966 and 2007, less than 1% of the scholarships awarded by the programme (Barr and Skrbiš 2008, 215). Now, many of these texts have been absorbed into the ChatGPT archive.

Annotation, therefore, creates a context in which Singaporean Muslims can speak back to the AI archive from the margins. Through this process I aimed to create a space for my interlocutors to read against the grain and therefore show the biases which it perpetuates. This allows us to think though AI not as an objective producer of texts, but just the next step in a long history of texts used to express power. By exposing these ideologies, we are able to see what ideas from the archive motivate the futures imagined using ChatGPT or other generative AI.

CONCLUSION: A COMPOSITE VIEW OF AI AND THE STATE

At the beginning of this PhD project, I believed my research methods could be straight forward. I was studying governance, so it made sense to look at government organisations as a starting point. The Singaporean state was heavily investing in AI technologies, as it had with the internet in the 1980s. The Singaporean State has several government agencies dedicated to digitalisation, ensuring that Singapore would be at the forefront of the latest digital revolution. Therefore, all I had to do was go to the government agency which represented the Muslim community, and they would have AI projects already up and running. My encounters with MUIS were a rude awakening. Where was the AI? I could not see much, and neither could they. Even the brief glimpses of AI arising from their interactions with SEO seemed too fleeting to build an entire PhD thesis around. Then when six months later they cut off contact, even this flickering possibility was snuffed out.

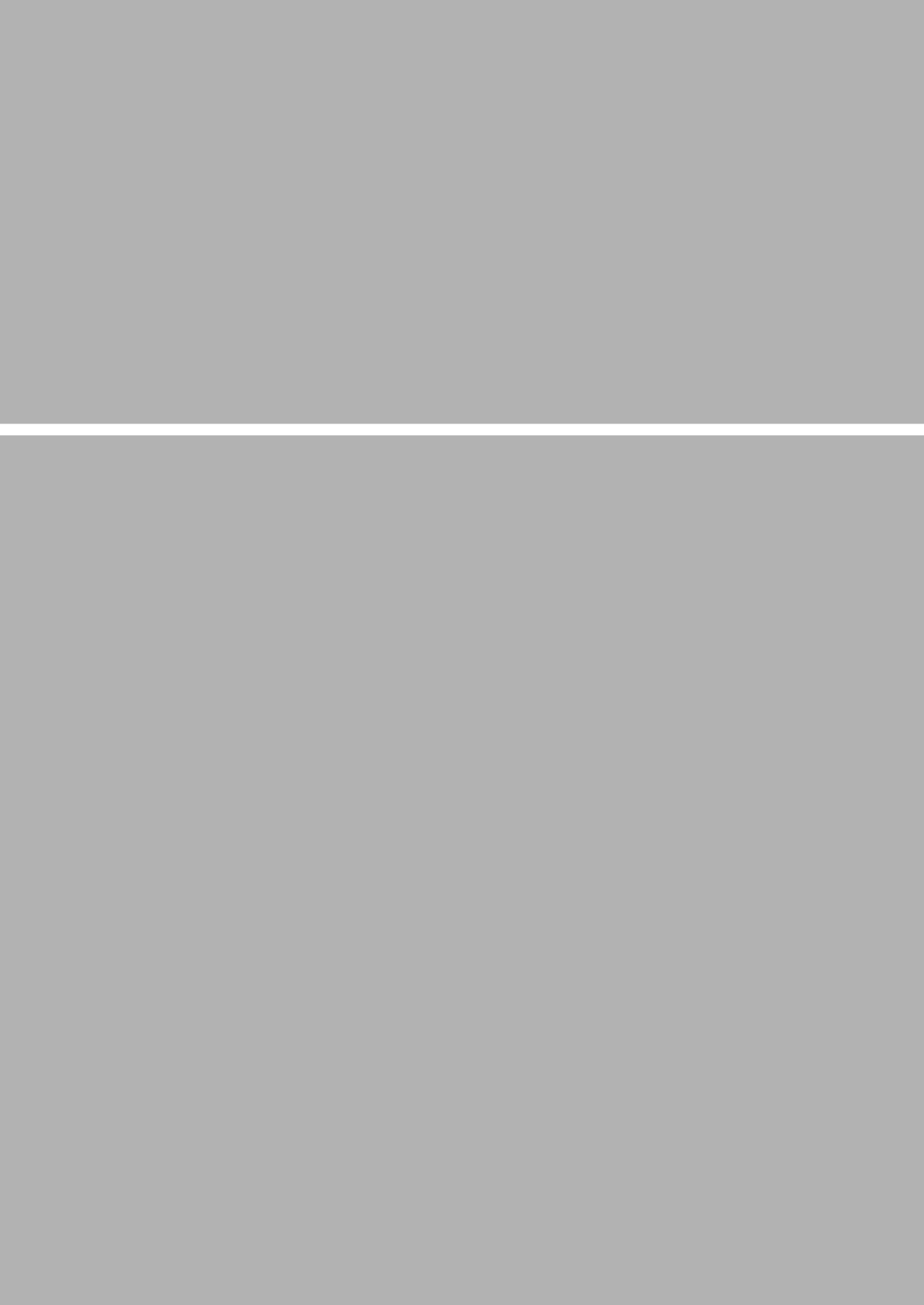
Of course, my perspective was never quite so simplistic as this. I was well aware that there were tensions between MUIS and the publics they governed. I had already begun to make contacts outside this centre of power. Yet my, on again, off again relationship with MUIS was instructive of how states obscure and foreclose. As the project went on, I saw many similarities between this stance of the government, which argued that citizens ought to leave the particularities of governance up to the state, and those of AI technologies. Technologies which we are encouraged only to think of in our fleeting interactions with its interfaces. Furthermore, there were linkages between state, AI, and the indeterminacy of future. The promise of the Singaporean state is that if the public waits patiently, and puts up with curtailed rights, they will see that the government was right all along. Similarly, AI companies tell us not to worry that this current version does not work, if we wait, the next patch will. These promises remain indeterminately in the future; the next patch is always the final patch.

Over time, this project therefore became more and more about the seen and the unseen. What in fact lies behind these indeterminant promises? No single vantage point could answer that question. AI, as I have described, is far too distributed, ephemeral, and contested to be contained by a single view. As much as I appreciate and laud projects like Crawford's (2021) "Atlas of AI" or Estampa's (2024) "cartography of AI" for

mapping the entirety of AI systems, by zooming out so far, they replicate the intangibility of AI. Many AI processes happen too far away from our day to day lives to produce affect. How could we make the infrastructures of AI more present within people's daily lives, so that they may reflect on its impact. Therefore, in my methodology I wanted to return the tangibility and immediacy of AI.

To get a partially complete image of AI, I needed to think of it together with my interlocutors as its component parts. To do this, I needed to create contexts in which my interlocutors could experience AI in their everyday. To understand AI as policy I looked to the public talks of government institutions to understand how they defined it. To see AI as a cultural artifact which can be imagined in a plurality of ways, I looked to the work of artists and MUIS who assert different applications of AI. To read AI as an archive, I allowed my interlocutors to annotate ChatGPT's writing in order to demonstrate how it regurgitates the texts within its database. Finally, to hear AI as an infrastructure, I walked with my interlocutors through fields both visible and electromagnetic to speculate on where AI existed. Taken together, these parts of AI create a composite, partial, image of AI as it intervenes in daily life. AI is a technology which is shaping government policy, writing culture, soundscapes, and our future, yet in many ways it remains strangely invisible. This toolkit of methodologies aimed to make AI tangible.

In Nyamnjoh's (2012) article 'blinded by sight' he recounts the parable of the blind men and the elephant. Each person in a room grasps some separate element of the elephant and proclaims to have understood the whole. Nyamnjoh uses this parable as a reminder to be cautious of ethnography which is merely a monologue. A single view can be misleading. Nowhere is this truer than in descriptions of AI. All too often, descriptions of AI are content to rely on simple metaphors. At AI Singapore events, it was frequently repeated that AI was "just data fed to maths." However, this partial description reduces the vast reality of the elephant that is AI. As Niewohner (2016) argues, the great strength of anthropology was never that its practitioners had some special access to reflexivity, but that it was able to move across different reflexivities. To understand AI, anthropologists must move across definitions of the technology and invite their interlocutors to co-laboratively think through the implications of these disparate parts.



Chapter 2

AI Epistemology in Singapore

INTRODUCTION – AI AS INDISPUTABLE FUTURE

In the Summer of 2024, I went to the National University of Singapore's innovation hub for an event about sustainable AI futures. This innovation hub is the home of AI Singapore; a State-Owned Enterprise set up in 2017 to spearhead Singapore's drive into an AI future. Their two stated aims are to facilitate all Singaporean businesses to use AI systems in their operations, and to upskill Singaporean citizens to use AI. The event was part of a lecture series run by AI Singapore towards their latter aim.

From the outside AI Singapore's office was suitably municipal for a partially government owned company. However, even from the street there were hints of Silicon Valley's design influence. Through the glass revolving door, I could see a large LED screen which wrapped around the elevator bank on the ground floor, and beyond that a plant wall. The screen pronounced the event we were all there for, the "AI Innovation Tech Talk: Sustainable AI."

Before the talk there was a buffet dinner in the room with the plant wall. I sat at a table with two men, one from Brunei who worked in oil and gas, and the other from Singapore, who worked in gas and oil. Both were programmers for their respective companies and bonded over their shared desire to upskill in what might become a precarious sector due to climate change. In other words, the event had found its audience among young tech professionals with concerns about climate change, though perhaps more from a business perspective than an ecological one.

My hastily made judgement was somewhat confirmed when the lecture began with a business pitch. The head of AI Singapore outlined the company's approach: they offer government grants and technical support to businesses integrating AI into their operations. Further, young professionals can join their 6-month training scheme and become AI engineers. The argument went that in a future where many businesses had integrated AI into their processes, many more AI engineers would be required. With this came a twin promise, AI would make businesses more efficient and create new secure jobs for young people. However, these promises came with a threat. If people failed to adapt, they would not lose their jobs or businesses to AI, but to someone else using AI.

Business pitch delivered; the lecture proceeded to discuss sustainable AI. The speakers proposed two solutions to the skyrocketing ecological costs

of AI. First, a technical solution called “Tropical Data Centres.” This approach aims to raise the safe operating temperatures of Data Centres from 20–25°C to 27°C thus lowering cooling needs and saving energy. The second was less technical, make AI less accurate from around 90% accuracy down to 70%, this would save on computing power, and energy required for reinforcement training. By making the technology less accurate and more efficient AI could become sustainable.

To me, there seemed to be a clear conflict between the business pitch and the sustainability lecture. As Pasek (2023) has pointed out, the energy demands of AI technology are not driven by users, but by data centres. More reliance on AI will inevitably lead to the construction of more data centres, each of which consumes more energy. Even if we use technology less, or more efficiently, data centres are “always on” and consuming resources. The goal, therefore, should be preventing the construction of more data centres (Pasek 2023, 4). Even if these data centres could be more efficient, AI Singapore’s stated aim to help businesses integrate AI into their systems processes, therefore contradicts these improvements in sustainability.

When the Q&A opened, I pointed this out and asked what their plans were to ensure no more new data centres were built. And everyone laughed, even my new friends from the buffet dinner. For several seconds, which felt like a lifetime, the panel did not answer. Then the head of AI Singapore Lawrence Liew stepped in and explained that AI technology was here to stay, therefore we had to use it. That being the case, we needed to use it as sustainably as possible.

As I sat on the bus back to my hostel, I thought about this answer. Prior to this event I had assumed that people within organisations like AI Singapore were either unaware of or simply did not care about the environmental impact of AI. However, what this event made clear was that people were aware and even gave the performance of caring about the environment at these events. It seemed that whilst these events professed to care about the sustainability of AI these considerations were overwhelmed by the imperative to use AI and grow the economy.

The Singapore Smart Nation

Established in 2017, AI Singapore is one node in the sprawling Smart Nation project which the government initiated in 2014. AI Singapore has two roles within the Smart Nation, first it creates training programmes

about AI technologies for government employees and the public. Second, it works as an intermediary between the state and businesses. In this role they offer government grant money, and technical support to Singaporean businesses which want to integrate AI into their processes.

The Smart Nation project began with Data Spark (Kong and Woods 2018) a collaboration between the Government and Singtel⁵² which installed 1000 sensors all over the city which measure everything from traffic levels, to weather conditions and crime rates. This was later expanded in 2016 with Polcam and Polcam 2.0 which installed 7300 cameras (Koay 2017). Additionally, the data from buses and trains are collected through tap to pay systems. This network of cameras and sensors is referred to as the “Smart Nation Sensor Platform.” To support this huge flow of information, there are also an unknown number of data centres across the Island.

This data flows through the data centres and into GovTech, which assumes two crucial roles. Firstly, they develop software and services like “Singpass,” a platform enabling Singaporeans to access various amenities, from healthcare to public swimming pools. These services, in turn, generate even more data. Secondly, GovTech sorts, parses, and anonymises this data before disseminating it to government agencies and State-Owned Enterprises. Within the government, this data fuels the creation of fiscal, technological, and social policies. This process of sorting through the masses of data which are collected daily across the Island is managed using AI systems. Although the exact implications of this data remain elusive, it is evident that the Smart Nation has become the dominant governance paradigm of the Singaporean State. Despite my efforts, officials at GovTech and the related agencies never returned my emails.

Given AI Singapore’s role as an intermediary between the state, businesses, and the public, I was able to attend their AI training sessions and public events. These spaces provided valuable insight into how AI is imagined by, and implemented within, the governance structures of the Singaporean State. In this chapter, I examine how the twin concepts of the Smart Nation and AI shape the epistemologies of the state, and how

52 50% of shares in Singtel are held by Temasek Holdings, the Singaporean governments investment firm. As of 2024 Singtel has 4.6 million mobile users in Singapore. (Singtel 2024 Factsheet Singtel . Accessed: 24 February 2026.

these epistemologies, in turn, are shaped by the political ideology of the ruling People's Action Party (PAP).

I begin by exploring why AI has become so compelling in Singapore that the prospect of *not* using it is considered laughable. I then draw on ethnographic examples to examine how AI functions epistemologically. These conceptions are then situated within the PAP's post-colonial and neoliberal ideologies. Through analysis of key state texts, including then-Prime Minister Lee Hsien Loong's launch speech for the Smart Nation initiative and the 2020 Digital Government Blueprint, I show how the Smart Nation project regurgitates foundational ideas of the PAP.

Ultimately, I argue that the AI's epistemology is aligned with the PAP's long-standing ideology in ways which foster a form of 'smooth', anti-political governance. This brings us to a central tension: what happens when this epistemology, rooted in order, efficiency, and prediction, confronts the inherently messy, unpredictable realities of governance? A question taken up in the following chapter.

Why Is the Idea of Not Using AI Laughable?

In 2014, then Prime Minister Lee Hsien Loong launched Singapore's Smart Nation initiative stating that the project would allow Singaporeans to "create possibilities for ourselves beyond what we imagined possible" (Loong 2014⁵³). Possibilities which would be "enabled seamlessly by technology, that offers exciting opportunities for all." (Digital Government Office 2018⁵⁴) The promise of this new Smart Nation was that with the assistance of infrastructural projects like Data Spark, the government would be able to track everything in the city, from weather patterns to traffic incidents. No information would be outside the reach of the state no matter how trivial. As Loong put it at the time "Imagine if we can tap on everyone's local knowledge and anyone can contribute data: animal sightings, traffic incidents, potential hazards for cyclists, even the best mee pok or nasi lemak" (Loong 2014). With this huge well of data, the Smart Nation promised to make the economy more productive, and the state more responsive.

This trust in quantification is nothing new in state craft and governance. In both the UK and France in the 19th century societies of statistics

53 PMs Office (2014) "PM Lee Hsien Loong at the Smart Nation Launch." Accessed: 7 November 2025.

54 Smart Nation Office (2018) "Smart Nation: The Way Forward" Accessed: 7 November 2025.

emerged, which urged governments of the time to govern based on numerical facts. They argued that using quantification to govern was more egalitarian because mathematics “involve rules of discourse so constraining that the desires and biases of individuals are screened out” (Porter 1995, 74). Furthermore, quantification was aligned with the ideological basis of democracy emerging in Europe a century before. While we may use different words for the number one, its value and meaning remain constant across cultures. This perceived commensurability underpins modern conceptions of equality in democratic societies. For democracy to function, individuals must be understood as commensurate. Each person must count equally, as embodied in the principle of “one person, one vote.” This idea emerged from the egalitarian impulses of the American and French Revolutions, which sought to establish “a society of similar individuals, in direct opposition to aristocratic society” (Walker 2020, 149). Consequently, statistics were conceived of not only as objective, but equalising.

However, statistics have also been used as a mechanism of state power. As Foucault argues, biopolitics marks a transition from disciplinary power, which targets individual bodies, to a form of governance that operates through the management of populations by controlling aspects of life like health and reproduction. By designating groups as populations, the state renders them into commensurate and measurable units, enabling governance through statistical analysis, policy tools, and aggregated decision-making rather than direct coercion⁵⁵. Tsing (2015) illustrates how this commensurability creates dehumanisation in her account of Portuguese imperialism, where these ideas shaped the plantation logics that underpinned the colonial economy. Enslaved people from across Africa were stripped of their familial and social contexts and rendered interchangeable as forced labourers. Through this process, plantations converted individuals with relational ties into commensurable commodities. As Tsing (2015) argues, this transformation was crucial in ensuring that enslaved people lacked the social systems necessary to resist or escape Portuguese control.

55 It is interesting to note here that a similar process was followed in the early development of cybernetics. As we explored in the introduction the information theory of Shannon and Wiener was premised on making words into interchangeable units which maintain their meaning across context. Likewise, making products and labour commensurate is a cornerstone of global capitalist systems. An analysis of the synergies between these various systems, their ideologies and epistemologies are worthy of more exploration but is outside the scope of this chapter and thesis.

Such biopolitical systems of control were used by colonial powers in Southeast Asia. As Noor (2019) argues, British imperialism relied on the creation of categories that rendered colonial subjects interchangeable. For instance, under the East India Company, Governor-General of Bengal Warren Hastings sought to “define what was ‘Indian’ and to create a system of rule that would be congruent with what they thought to be indigenous institutions” (Noor 2019, 40). Similarly, Stamford Raffles employed census data in Java to define and fix a notion of Javanese identity. As Noor (2019) shows, Raffles argued in his 1814 Javanese regulations that to better control the Javanese population, colonial laws and regulations should follow existing laws that people in Java would find familiar. In order to make the claim that his laws achieved this, Raffles positioned himself as ‘knowing’ the Javanese. In fact, Raffles would later claim in his book “The History of Java” from 1817, that “he knew more about Java than any living Englishman” (Noor 2019, 30). In doing so, Raffles attempted to codify Javanese identity so that the Islands population could be made governable via procedures based on that identity (Noor 2019, 64). These efforts, therefore, imposed classificatory regimes under which individuals could be quantified and treated as equivalent units within a larger population. In effect, one Javanese person could be counted and governed in the same way as any other, reducing social complexity to manageable metrics. This abstraction enabled colonial administrators to rule at a distance, without engaging with the specific social ties, identities, or contexts of those they governed (Whittaker 2023).

This is the core tension of statistics, that whilst it can offer a broad overview of a population, it misses the granularity of individuals and their relations leading to dehumanisation (Porter 2020). The inability to render both the specific and the general has produced an epistemic divide “in natural and social sciences, requiring distinct instruments that would render them accessible as well as separate methods and infrastructures of knowledge production” (Aradau and Blanke 2022, 23). This is significant not only because it undermines the claim of objectivity in statistics, but also because it dehumanises those who are made statistics, as the histories of slavery and colonialism attest.

However, the Smart Nation and AI claim to solve this epistemological challenge. Whilst data sets are not necessarily larger than before, what has shifted is the use of AI to make them intelligible. The introduction of algorithmic systems, particularly those associated with Artificial Intelligence, has reconfigured the analytic potential of data itself. Where

once data resembled haystacks in which vital needles might be buried, it is now treated as an endlessly sortable resource, open to partition and reconfiguration in ways that expose patterns across multiple scales. Within the logics of the Smart Nation, the pairing of AI and ubiquitous sensor-driven infrastructure promises to render legible both the general contours of societal behaviour and the fine-grained details of individual action. Consequently, as Aradau and Blanke (2022, 22) note, algorithmic systems generally produce a knowledge regime that claims to move seamlessly between population-level analytics and the intimate details of everyday life.

The Smart Nation paired with AI, therefore, presents an alluring possibility. A way to collect huge amounts of data on a diversity of subjects whilst maintaining the possibility of observing the individual. Through such a system the State can maintain the perceived objectivity that comes with statistical analysis, and its bias free methodological rules, without losing sight of the personal and specific. The Smart Nation with the help of AI therefore claims to offer the possibility of closing the epistemic gap between social and natural sciences. However, what exactly AI is conceived of doing within this system is opaque. To understand the epistemological role of AI within Singaporean governance I now turn to an ethnography of how AI is described as working at AISG events.

AI Epistemology in Singapore

When AI Singapore (AISG) was founded by the government in 2017, they had two goals in mind. First, to encourage Singaporean businesses to embrace AI and embed the technology into their processes. The second was to train both government officials and the public to use AI technologies which were quickly becoming part of their everyday. Speaking at that sustainable AI event in the summer of 2024 the director of AI innovation, Laurence Liew, stated that in the beginning, AISG focused on one-to-one sessions with small and medium enterprises to understand their needs. What they found, he said, was a desperate need to demystify AI. They wanted to explain what an AI cannot do, what it can, and how those results are achieved.

With support from the government's lifelong learning scheme SkillsFuture, AISG designed two courses, one called AI4E (AI for everyone) and AI for Industry Literacy in AI. These courses were made available for free to the public and made mandatory for all civil servants. Having taken them, permanent Singapore residents may go on to further courses in AI devel-

opment designed by AISG and subsidised by SkillsFuture. Since its launch in 2015, SkillsFuture has been a cornerstone policy of the PAP, with the aim of upskilling citizens to prepare them for the digitised economy of the Smart Nation (Ng 2018, 125). The aim of these sessions is to raise the general understanding of the Singaporean public, and especially its civil servants, on how AI works.

Given AI’s role as interpreter of Smart Nation data, and SkillsFuture’s task of instilling an understanding of how AI works, attending these literacy events offers a window into the ways of knowing espoused by the state through these technologies. So, on May 4th, 2023, I became an AI Singapore certified AI for industry user.



Figure 8– AI for Industry certificate

As Laurence Liew said a year later at that sustainability event where we opened this chapter, these training sessions aimed to demystify AI. By the end of the session, pronounced our AI teacher, we would see that AI was just maths. We sat in a room, with space for over one hundred people. One entire wall was glass overlooking the lush NUS campus where AISG is based. Just visible, jutting out of the horizon, was the metropolis of downtown Singapore. The room was at about half capacity, perhaps fifty

middle aged Singaporean's mostly in business suits. Our teacher in suit trousers and a light blue shirt with the top button open began by asking if anyone in the room had *not* used ChatGPT. One woman in a colourful tudung sat in the back row raised her hand, but the instructor breezed on. "We have all used AI, right?" He said, "it's everywhere."

The reason, he argued, that AI was suddenly everywhere was threefold. First, thanks to the Smart Nation, Internet of Things and social media use, there has been a huge increase in the amount of accessible data. Second, the cost of computing had drastically reduced, something supported by the huge number of data centres built in Singapore. Finally, new algorithms, or ways of sorting data were being created every day. Often these new algorithms were freely available as open-source software. "F/OSS has democratised AI!⁵⁶" he concluded.



Figure 9– AI magic T-shirt

I noticed sat a row in front of me, was a man wearing a T-shirt which read "predicting the future isn't magic, it's Artificial Intelligence." As if on cue our teacher turned towards this exact idea. Using the example of Housing Development Board apartment⁵⁷ prices he demonstrated how AI can predict the future. The teacher began by showing us a simple

⁵⁶ At an F/OSS conference organised in Singapore I met a sociologist who was surveying attitudes among tech professionals about open-source software. They told me that in their experience, programmers in Singapore were keen on F/OSS until they had a viable product, at which point they would lock their code away by making it proprietary.

⁵⁷ Known colloquially as HDBs.

scatter graph which charted HDB prices over time. By drawing a line through these points, the instructor said, we could make a rudimentary estimation of HDB prices in the future. This was simple mathematics, he explained and is the basis of AI predictions. However, where the scatter graph had only two parameters, time and price, machine learning AI could have many more parameters. For example, in the case of HDB prices, an algorithm could consider parameters including which floor the apartment is on, the proximity of schools and MRT stations as well as other, less obvious factors.

The question then, is how many parameters were necessary to make accurate predictions. The instructor stated that this was a question more of art than science and was often answered through trial and error. This process of trial and error is often referred to in machine learning as back-propagation. Back propagation is a kind of supervised learning in which an algorithm is given historic data with which to predict a known answer. For example, an algorithm might be given HDB prices from the 1990s and asked. To predict the price of an apartment in the year 2000. The AI engineers know the correct price of the apartment; therefore, they can tell if the AI is getting the right answer. If the AI prediction is incorrect, new parameters are added to the algorithm, and the weighting of those parameters are adjusted. This process is repeated until the AI can accurately predict the right answer.

How many parameters to include in such systems remains an open question. For example, the teacher in our session gave the example of an AI model called Megatron-Turing which has 530 billion parameters. He argued that because AI can consider so many parameters, what it creates is a “representation of the real world.” The more data, and parameters included in its calculation the closer this model comes to reality. He conceded that this process remained mysterious, whilst the data inputs can be controlled, and the outputs observed, what exactly happens in the deep learning of an AI is uncertain – a black box. Despite this, he concluded, we could now see that AI was simply “feeding lots of data to maths.”

Having concluded this demonstration of how AI works, our instructor moved on to the issue of bias and ethics. They began with the premise that “AI is just maths and has no feelings hence cannot be biased.” The AI in their view was neutral, but what caused bias was the data. Garbage in, garbage out, as the famous saying goes. However, bias they argued was also caused by incomplete data sets. To show this they used the

example of showing an AI algorithm photos of a person standing on the moon. The AI will struggle to classify this image because there is not much data of this kind. As a result, bias in AI can be effectively managed by extracting more data, that way the AI model becomes a more accurate representation of reality. Of course, the real world is full of bias, and therefore this could not be the only measure to make AI outcomes fair. To make the process ethical, it was important to ensure that there was either a human in the loop, or a human over the loop. They explained that having a human in the loop meant having a person always running the AI. Whereas human over the loop meant having a person check in on AI outputs to ensure they were fair. They concluded that the more a human is involved, the more ethical but slower. Before we began the quiz which gave us our AI certificates, the instructor reminded us that AI should be explainable, but that this was a challenge because deep learning is a black box. After that, a QR code was put on screen which linked us to a quiz. Ten questions later I was AI certified and ushered off to another buffet.

Of course, this is not the full extent of the training which AI Singapore offers. Following this course, permanent residents can take extended courses which go into more depth. However, these sessions, and the ideas they present are still highly relevant given that they represent what civil servants are expected, at a minimum, to understand about AI, and how AI technologies are presented to the public. With this in mind, there are three ideas presented in this session which I want to unpack further.

AI's Epistemological Role in the Smart Nation

Throughout the session, the presenters make the claim that reality can be decomposed into parts. We can see this most clearly in their discussion of HDB price prediction. They argue that the future value of a HDB apartment can be broken down into constituent parts, or parameters. In other words, the price of an apartment is composed of factors like what floor it is on, how close it is to a train station and so on. These decomposed data points can be used to make a 'model of reality' from which future prices can be predicted. The logic here is that the whole of a HDB is formed of its constituent data points.

However, this logic is not only applied to housing prices. Another project which was mentioned during the presentation was one in which the likelihood of loan defaults was predicted using social media data. In this project historic social media data, presumably along with other

parameters, was collected to make correlations about what kind of people default on loans. Under this logic, what people will do in the future can be understood by constituent data points just like house prices.

Deleuze referred to this as a process where “individuals become dividuals and masses, samples, data, markets or ‘banks’” (Deleuze 1992, 5). As dividuals, subjects are “comprised of interrelated but independent aspects...distributed across databases” (Iveson and Maalson 2019, 335). Therefore, aspects of a person can be turned into data which can be compared to an aggregate of other people’s data. The correlations produced can then be used to predict the behaviour of other individuals (Aradau and Blanke 2022). People, become a cluster of data points, no more than the sum of their parts and therefore commensurate to one another. As D’ignazio and Klein (2020) argue, a consequence of this process is that data becomes detached from the bodies which produce it. Despite claims that AI can return individuals to big data sets, what we see in this process is that people are simply decomposed further into commensurate units. It is not individuals who are made commensurate to others in a defined population, but instead the data individuals produce.

When people are decomposed into dividuals and then reconstructed as an aggregate citizen, this tends to subordinate the experience of individuals to this constructed data-citizen. For example, in Powell’s (2021) *Undoing Optimization*, she gives just such an example. Residents of a neighbourhood in London noticed that a set of traffic lights were changing too quickly making crossing for pedestrians difficult, especially for elderly and disabled people. When the community reached out to the council, they were told that data from traffic light sensors showed that pedestrians had enough time to cross. By reducing the citizens to a cluster of data-points, the experience of individuals at the crossing could be excluded as not representative. Zandbergen (2020) refers to this as anti-politics⁵⁸, where citizen centric projects end up excluding the voices of citizens by representing them in the form of data rather than engaging with them as individuals. This is an example of what Haraway (1988) calls the God Trick in which data offers a perspective from everywhere, and as a consequence creates a view from nowhere. In this case, AI produces the perspective of all citizens as an aggregate, and as a result, no

58 Further, Zandbergen’s use of anti-politics is similar to Ferguson’s (1990) “anti-politics machine” in that Smart City projects which fail can be re-framed as successes for what they can teach us about the next project. Something mirrored in the AI space where failed projects only make way for future success. However, Zandbergen does not make this connection.

one person in particular. Returning to the example of loan defaults, the likelihood of someone defaulting on their loan was not compared to the profile of individuals who had defaulted, but on an aggregate data of all people who defaulted on their loan.

However, it is not only citizens who are potentially alienated by the political process of AI governance. Returning to the example of the HDB prices, the instructor described the process which AI is undertaking as a complicated scatter graph. Where a scatter graph has only two possible parameters, a machine learning algorithm has no such limits, like Megatron-Turing which has hundreds of billions. Nick Seaver (2021) compares this to multidimensional scaling, an anthropological method in which participants sort cultural ideas. The more often participants put terms together the more conceptually similar they are considered. They are then plotted onto a graph showing the relationship between them. However, “Where MDS plots were typically limited to the two or three dimensions that humans can readily see as space, machine learning has no such limits, and its dimensions can proliferate without end, responding to whatever patterns may appear in the data” (Seaver 2021, 55). The issue, Seaver points out, is that once this goes beyond three dimensions, we can no longer clearly understand the relationship between the data points on the graph, because we cannot imagine a four-dimensional space, let alone one with hundreds or even billions of dimensions.

This, in part, helps to explain why such systems are black boxes, as was reflected in the session. The AI is simply considering way more parameters than AI engineers can comprehend. Everything up until this point is explained as simple – data is extracted, it is plotted against one another and then results are produced – but it feels as though there is a step missing in this explanation. That is because there is. As Aradau and Blanke argue, “it becomes unclear how and where decisions emerge from small steps in the human-machine workflows. By appearing to work in banal and highly segmented ways, algorithmic decision making creates the impression of simultaneously doing less and more than we might anticipate that it could do” (Aradau and Blanke 2022, 65). What happens in the deep learning phase of algorithmic reasoning is and will most likely remain a mystery.

Further, there is a more philosophical issue at play. In their book, algorithmic reason, Aradau and Blanke (2022) compare approving AI decisions to dropping a nuclear bomb. When dropping a bomb, the actual act

of pushing a single button is disassociated from both the huge processes and systems which create that bomb, and from the devastation which the bomb causes. They argue that “it is not just the fragmentation of work that ultimately impedes the comprehension of the product of one’s labour, but equally the magnitude of what humans can produce” (Aradau and Blanke 2022, 48). As we have seen, the magnitude of a machine learning algorithm is beyond the user’s comprehension, but also, they are alienated from the results of that algorithm. Rather than following rules that eliminate bias, as statistical methodologies have been argued to do, in AI systems operators lose sight of the process entirely. This shifts their role from being engaged in the process of creating knowledge to overseeing outputs and adjusting for bias.

The epistemology of AI within the Smart Nation project therefore has two effects. First, people are reduced from individuals to dividuals, becoming merely a cluster of datapoints which can be decomposed and recomposed in order to predict their behaviour, and the behaviour of others. This could further reduce their civic and political role to that of providing their data to the Smart Nation. As the session instructor argued, bias is the result of incomplete data sets, therefore, to make yourself legible to the state, it is the duty of citizens to provide more of their data. In this way, they can be incorporated accurately into the AIs model of ‘reality’. Cardullo (2021), goes even further than Zandbergen, calling this post-politics in which consequential governance decisions which affect people’s daily lives are turned over to technological systems that have little or no engagement with citizens. Second, the role of engineers, and government bureaucrats is also reduced. As was explained during the training session, the computer scientists building AI systems are only able to adjust inputs. Meanwhile, the role of bureaucrats is merely to oversee outputs as the human over the loop. In both cases, people are excluded from the decision-making process which happens during the black box deep-learning process.

As Ho argues, in Singapore “Participation in the Smart Nation is restricted to computational tinkering and tweaks that seek to improve efficiencies according to economic and technical rationality” (Ho 2017, 3112). Consequently, deeply embedded social challenges become the subject of technical tinkering. Cardullo concludes that the Smart Nation, and its post politics are a project of neoliberalisation which “works towards boasting a policy rationality” (Cardullo, 2020, 8). As Cardullo (2021) further argues, the Smart City is aligned with neoliberal ideas in that it

relies “on datasets and forecasts [that] sustain the economic rationality of efficiency, performance, and quantitative deliverables proper of neoliberal economics” (Cardullo 2021, 17). Further, as Aradau and Blanke argue, the logics behind the Smart City “aim to datafy the world and make it algorithmically acceptable: institutions, subjects, experiences, relations, everything become ready for algorithms” (Aradau and Blanke 2022, 208). This project, of making things “ready” for the algorithm is also one which makes the world and its complexities align with neoliberal market logics by making the unruly parts of society legible. By doing so, AI outputs are appealing to states which are already invested in these neoliberal ideals.

The ties between the Smart Nation and Neoliberalism are important because the idea of the Smart City did not emerge from nowhere. They have a potent appeal as utopian, and yet not idealistic, because these utopias are governed by market logics. This idea of a realistic utopia has made the Smart City “one of the winning discursive metaphors for the way contemporary society organises and understands itself” (Cardullo 2021, 16). These ideas are successful, because they offer a utopia whilst simultaneously conforming to ideas of rational governance which preceded it. In what follows, I want to show how the Smart Nation, with the help of AI, is aligned with the dominant neoliberal governing ideology of the People’s Action Party who have ruled in Singapore since 1959.

Why Does This Fit with the ‘Ideology’ of Singapore?

Since 1959, the People’s Action Party (PAP) has ruled Singapore. In its early days, the party relied on the support of communist members, and their ideology, to gain the support of the working public. However, after 1965 and the split with Malaysia, the party shifted away from its communist roots. Instead, the party claimed to take a pragmatic approach, choosing to deal with policy issues as they arose, rather than approaching them with a predetermined plan or ideology (Chua 1995, 1). However, some have argued that whilst the PAP continue to claim their approach is non-ideological, its approach in fact fits a neoliberal approach to governance with market rationalism as its ideology (Chua 1995, Mauzy & Milne, 2002 and Abdullah 2021).

This neoliberal pragmatism is intensified by the ideology of survivalism, in which the economic prosperity of Singapore is prioritised above all else (Hong and Huang 2008, 1). These ideas are particularly influenced by the anxiety that Singapore is a small nation without natural resources

which is surrounded by much larger neighbours who may, at any time, invade Singapore. This fear of invasion is also in part motivated by the split with Malaysia in 1965. This split is frequently blamed on racial riots which erupted in Singapore during the 1950s and 60s. Riots which are often blamed on the Malay Muslim population, and agent provocateurs from Malaysia and Indonesia. As a result, the split with Malaysia and racial discord have become the “primordial fault lines” (Hong and Huang 2008, 22) in the Singaporean State’s anxieties about survival.

This has directly resulted in two related ideologies, one of communitarianism, and the other of racial harmony. Having gained independence, Singapore needed to construct a national identity. However, the PAP argued that the nation was formed predominantly of citizens with a migration background. Therefore, the PAP emphasised a communitarian identity which placed the success of the nation, ahead of personal, community or ethnic loyalties. To enforce this communitarian identity, the state “reminded Singaporeans of the tumultuous past that was wrought with racial riots, and the need for social cohesion and racial harmony to ensure economic survivalism through a continued stream of foreign investment.” (Lim, Yan, Leong, and Hong 2014). This focus on foreign investment was also central to the post-colonial state.

This post-colonial Singaporean ideology was tied directly to neoliberalism. As Meng argues the Singaporean economic model has “emphasised free trade” (Meng 2015, 123). This was only further entrenched in the 1990s when the state further liberalised its markets to entice foreign investors and compete with economic booms in Hong Kong and Japan (Meng 2015). However, this neoliberal approach was not contained to economic policy. Taking their pragmatic approach to governance, the PAP transformed all policy problems into issues which “can be managed by applying ‘rational’ utilitarian calculations” (Ng 2018, 119). Given its survivalist, and pragmatic approach, neoliberalism fit easily with Singaporean post-colonial governance. These principles served to render “all government decisions...[as] ‘technical’ problems to be solved only by experts...the electorate as lay individuals do not possess the requisite knowledge to be trusted” (Chua 1995, 204). As Chua (1995) has argued, this approach left citizens with a question – do you think you know better than the government? The economic success of Singapore further bolstered this argument.

The combination of these principles created a unique governing logic in the Singaporean state. As we have seen, even social justice principles such as racial harmony have been rationalised according to market logics. As such Singapore is “distinct among post-colonial societies in its valorisation of the colonial past as part of the telos of progress and freedom” (Wee 2007, 4). This is particularly evident in the state’s handling of Stamford Raffles, a British colonial officer who ruled the island in the early 19th century. Unlike, in many post-colonial states where national myths distanced themselves from colonial rulers “the PAP government recognised Stamford Raffles as the country’s founder. A move taken consciously also to convince the British and other potential investors that the country was wooing that there was no fear of the government adopting nationalist policies that would be inimical to their economic interests” (Hong and Huang 2008, 5). To this day a statue of Raffles stands with his back to the city’s Central Business District, linking the country’s present economic success with its colonial past.

Understanding the ideology of the PAP helps to explain why the Smart Nation, and its twin concept AI, have come to be seen as inevitable in Singapore. Despite its claims to the contrary, the PAP does have a political ideology. As I demonstrate here, the claims of pragmatism are in themselves part of a broader policy of neoliberal reform that the country has followed since its full independence in 1965. This approach has been extraordinarily successful for the PAP, who have maintained power throughout the country’s history and ensured economic success. Part of this success is down to the ideologies of survivalism and communitarianism, which call for citizens to put the state first, and challenge Singaporeans to think if they know better (Mauzy and Milne 2012). This has allowed the PAP to maintain its position as the political hegemon, despite its technocratic and authoritarian approach which often excludes the voices of citizens. However, as Ng (2018) points out “part of its [the PAPs] resilience is a corollary of the adaptive capacity of neoliberal ideology and practice to fit specific socio-cultural contexts” (Ng, 2018, 136). It is against the backdrop of these political ideologies that the Smart Nation entered the Singaporean political scene in 2014. In what follows I explore how the Smart Nation fits neatly into the governing logics of Singapore.

Smart Nation and Singaporean Government Ideology

To understand how the Smart Nation reflects the neoliberal ideals of the Singapore state, I will next look at two documents. The first is a speech from then Prime Minister Lee Hsien Loong at the launch of the Smart Nation initiative in 2014. The second is the Digital Government Blueprint from 2020. These two documents mark the start of Singapore's embrace of the Smart Nation, both ideologically and as policy. In what follows, I will show how these two documents replicate and reconfigure the governance ideals of survivalism, pragmatism, and communitarianism for a digital age.

One month after the split with Malaysia, Lee Kuan Yew, the first Prime Minister of Singapore, made a speech in which he laid out his vision for the future of Singapore. In it, he famously concluded: "Over a hundred years ago this was a mud flat swamp. Today this is a modern city. Ten years from now this will be a metropolis. Never fear." Here, Lee invokes a paternalistic developmentalist model where the state assumes total responsibility for national progress. His assured tone reveals the ideological core of post-independence governance, citizens need not worry, as the state would act decisively and rationally in their collective interest. This narrative of linear progress and state-led transformation recurs in the launch of the Smart Nation. At the close of his speech, Lee Hsien Loong links his premiership to that of his father, echoing the same rhetorical cadence: "50 years ago, we built a modern city. Today, we have a metropolis. 10 years from now, let's have a Smart Nation!" The Smart Nation, then, is not positioned as rupture, but as a continuation—another stage in Singapore's technocratic ascent. It is, in this sense, a rearticulation of survivalism, the imperative to remain economically competitive through state-led innovation.

Yet the successful realisation of this future depends not only on state leadership but also on the active participation of citizens. As Loong states, becoming Smart will benefit the whole nation, but only "if we get everybody active, engaged, excited, wanting to make this happen." This emphasis on collective responsibility echoes the communitarianism of the PAP's post-independence ideology. However, where the older communitarianism was predicated on discipline and conformity in the service of national development, the Smart Nation calls for a new kind of civic participation: one where citizens function as data-generating, self-optimising subjects.

This expectation is exemplified in Loong's anecdote about Smart electricity meters. He imagines a scenario where a citizen forgets to switch off their lights and air-conditioning:

"You are rushing, and, in your rush, you forgot to turn off your lights and your air-conditioner. In the old days, you either run all the way home or wait till the end of the day and kilowatt hours are burnt and money spent...today you should be able to get your iPhone, connect to your home and find out what the status is and if your air-conditioning is on, turn it off, and if your lights are on, turn them off. Save energy, save bills, save anxiety."

Here, the citizen is imagined not just as a user of infrastructure but as an efficient, self-monitoring actor responsible for environmental sustainability and energy savings. As Ho (2017) notes, such technologies are not neutral; they operate as tools of governance that encourage Singaporeans to adopt rational, data-driven behaviours. In doing so, they produce what Ng (2018, 126) calls "a normative set of values and attitudes amenable to the state's developmental strategy." The citizen becomes a calculative subject, responsible, data-literate, and optimising. This is the perpetuation of communitarianism, in which civic duty is fulfilled through data-sharing and behavioural rationality.

This transformation is mirrored in the way the state reimagines itself. The Digital Government Blueprint and Loong's speech both exhort public servants to behave more like Silicon Valley entrepreneurs. While in the 1990s and early 2000s the Singaporean state was often described as operating like a financial institution, efficient, risk-averse, and globally oriented, it is now encouraged to adopt a start-up mentality: agile, disruptive, and experimental. In 2024, the Singapore Economic Development Board released a report proclaiming Singapore as the next Silicon Valley due to its dynamic tech start-up ecosystem (EDB 2024). Yet this entrepreneurial ethos is also extended to the public sector. In his speech, Loong acknowledges that "it cannot quite be like a Silicon Valley company because it is not just a start up...but [the government] must also push the envelope, using technology to seek new applications, to find new approaches to existing problems." Similarly, the Digital Blueprint instructs civil servants to "think big, start small and act fast" (IMDA 2020, 15), a phrase that closely echoes Facebook's infamous motto, "move fast and break things."

What presents itself as a new kind of governance, in fact, perpetuates Singapore's longstanding survivalist ethos. The logic remains the same, in order to preserve the nation's competitive edge, the state must constantly adapt. Whether by opening markets in the 1980s, or embracing disruption today, the goal is the same, to ensure "labour market flexibility in an effort to supposedly optimise conditions for economic development and dynamism" (Ng 2018, 122). This imperative, to innovate or perish, is survivalism, dressed in the language of start-up culture and digital transformation. This transformation from citizen to neoliberal subject, and civil servant to entrepreneur is further emphasised by the language of the Digital Blueprint which throughout refers to citizen engagement with the state as 'transactions.' This language is a demonstration of how citizens have become customers of the state, and in turn how the state has become a business.

More subtly, Smart Nation policies reconfigure the epistemology of governance itself. Postcolonial Singapore has long embraced pragmatism, where social issues are approached as technical problems to be solved through rational planning. In the Smart Nation, this ethos is intensified. Loong argues that progress depends on the state's ability to "identify issues, prototype ideas, deploy them effectively to benefit the whole nation." Likewise, the Digital Blueprint claims that "digitalisation helps us to serve with greater empathy by enabling personalised and seamless experiences for different groups of stakeholders" (IMDA 2020, 3). These statements reflect what Zandbergen (2020) describes as "seamless smartness," where digital technologies promise to render difference and complexity legible through data.

In this vision, data becomes a kind of universal solvent, able to dissolve political contestation and produce objective policy. The more data that is collected, the more accurate, efficient, and empathetic governance becomes. Whether the issue is sustainability, mobility, or social cohesion, the Smart Nation promises that the right algorithm can produce the right solution. This is a rearticulation of pragmatism, a belief that policy can be both responsive and rationalised, personalised yet scalable, if only enough data is gathered.

Throughout Loong's speech, technology is presented as integral not only to government but to everyday life. The Smart Nation, he claims, will address everything from macroeconomic growth to interpersonal relationships, "Some lament that we spend too much time on Facebook and

Twitter and Instagram, and we need more face-to-face, and we have an app for that also.” The state’s role here is no longer merely to regulate, but to provide platforms for optimised living. Similarly, the Digital Blueprint promises to “drive broader efforts to build a digital economy and digital society, in support of Smart Nation” (IMDA 2020, 2). What emerges is a vision in which digitalisation is not one strategy among others, but the medium through which all strategies are pursued.

In this way, the Smart Nation project is not a break with the past but a regurgitation of it. It is a continuation of Singapore’s post-independence ideological commitments, communitarianism, survivalism, and pragmatism, filtered through the logic of data and the aesthetics of Silicon Valley. Under this new wave of neoliberalism, citizens are asked to become Smart citizens, rational, data-producing actors who help optimise the nation’s future. This is the new communitarianism. The state, in turn, becomes a disruptive innovator tasked with maintaining Singapore’s competitive edge. This is the new economic survivalism. And all of this is governed by the epistemology of data as able to resolve complexity across scales. This is the new pragmatism. The Smart Nation appeals so strongly in Singapore precisely because it regurgitates the ideological foundations of its past, offering a familiar promise, that through state-led innovation and disciplined participation, the nation will continue not just to survive but to thrive.

CONCLUSION – WHY DOES THIS MATTER FOR THE THESIS?

Statistics have long been perceived as a governance tool that produced equality. Its early advocates tied the use of statistics to their democratic values, if everyone is equal then everyone should be counted. Statistics was also perceived as objective because the rigorous methodology of its collection made it more resilient to personal interest and bias. However, this ability to turn unruly individuals into legible interchangeable units also made statistics a useful tool for governing at a distance as it was on plantations, and in colonies. Consequently, despite the claims of equality, statistics have frequently been used to dehumanise and control.

In the big data era, similar claims are made about the abilities of statistics to induce equality. Systems like the Smart Nation are able to collect more data, and in more granular detail than any other data extraction

in history. In fact, more data than any person or for that matter group of people could analyse. As a consequence, AI plays the role of making this data meaningful by sorting it into groups and finding novel correlations. The claim therefore shifts, it is not that people can be counted as interchangeable units, but that the data which makes up a person can be extrapolated to make an aggregate citizen. For the first time, data can seemingly operate at all levels, able to forecast large scale societal trends, but also able to be used to predict individual behaviours. This reduces people to less than the sum of their parts and this falls into the trap Haraway calls a God trick – the data ends up representing an average person, and not any person in particular.

This epistemology can be seen in action at AISG training sessions. At these events, representatives of the State-Owned Enterprise (SOE) argue that with enough data they can create a model of reality, upon which accurate future predictions can be made. They use the example of apartment prices – with enough data points considered we can predict the cost of any apartment. However, this is not just used to predict broad trends like housing prices, but also, as they described, to predict whether individuals would default on their loans. Here we can see how the same epistemology can move smoothly across scale. However, the session also demonstrated another difference between statistics in the past and the big data era. Where statistics claims objectivity on the basis of a rigorous process, it is in the AI process where what exactly happens with the Smart Nation data is lost. Human involvement is reduced at this stage to controlling what data goes in and checking in on whether the outputs are biased.

This creates what Zandbergen (2020) calls anti-politics where the role of people is reduced because they are perceived to be represented by the data. This is twofold, not only are citizens excluded as their perspective is datafied, but also civil servants are reduced to tinkering with the inputs and outputs of the system rather than actively engaging in policymaking. Cardullo (2021) goes further calling this post-politics, the inevitable outcome of neo liberalisation in which all policy is made to fit market logics. Under this system, citizens are assumed to be rational actors, and AI reveals their innate rationalities, rendering their actions predictable. The city in all its unruliness is made computable, predictable, and amenable to being governed by neoliberal ideals.

These are not new ideals in Singapore. After the separation from Malaysia in 1965 the PAP emphasised a policy of pragmatism. They claimed not to be ideological but instead policy followed the objective, pragmatic choice. However, it is clear that this policy was in itself an ideology in which pragmatism was tied to economic interests and, as a result, liberalising their economic markets. This position was justified by the idea of survivalism, that to survive and compete as a small country, Singapore needed to focus on economic success. Over time, this neoliberalising logic went beyond the economic and into all government policies. Despite the fact that these policies tended to exclude Singaporean citizens, the concept of communitarianism challenged them to consider if they knew better than the government.

In many ways, the Smart Nation and AI follow these ideological antecedents. Once again citizens are asked to sacrifice for the good of the country, this time it was to give up their privacy in order for the government to have the data needed to support its algorithmic governance systems. Once again, their voices were excluded, this time in favour of data which stood in as their replacement. At the same time, the government transformed itself to represent economic forces, this time in the form of tech companies and the ideals of disruption. All of this is justified on the basis of statistical objectivity, that by using statistics to govern, they claim to be certain not only of the right outcome, but the right outcome for everyone involved.

It might be reasonably asked what all this has to do with the governance of Singapore's Muslim community. In this chapter I have treated the Singaporean State as a monolith. This was not by accident; in this section I wanted to explore what ideology the state put forward about the role of AI within its governance strategy. What is presented is a smooth form of governance. With enough data, they argue, everything can be predicted, and therefore the government will be able to formulate policy which applies to all people at all scales. This is the ideological frame through which governance is managed in Singapore. Included within this is religious governance, which is managed by the religious authority MUIS (Majlis Ugama Islam Singapura). MUIS as a part of the government is encouraged to govern using AI systems and data. For example, the Digital Blueprint states that every government office will have an AI project, and that 90–100% of major government data will be made machine readable by 2023. This includes MUIS. AI systems are the ideological frame through which governance is done in Singapore. Whilst this chapter has

focused on the smooth ideology, in the next I want to explore what happens when that smooth algorithmic governance comes into contact with the messy realities of community. Neoliberal ideology, and its newest proxy AI, is the box through which the state including MUIS must imagine the future. In the following chapter I explore how MUIS aligns itself with the demands of this box.

THE FUTURE, AN INTERLUDE: PART 1, EPISTEME

How do these state-defined epistemology of AI, described in the preceding chapter, change the way Futures are imagined in Singapore? As we have seen, ideas of the Smart Nation and the AI, which interprets the collected data, are hugely politically influential in Singapore. They have this power in part because they replicate the political ideologies of the past. What is new is how the Smart Nation and AI shift the power of expertise in Singapore. Whilst it had been the political class who had the expertise to make 'pragmatic' decisions, AI makes these political relations even more asymmetrical. Only those with access to the data, and the skill to build AI are now in a position to make authoritative policy decisions. Despite claims to the contrary, that AI is democratised, collecting, and analysing data on this scale requires not only expertise but huge amounts of computing and infrastructure. This creates a hierarchy of knowledge and expertise. Those with access, namely the state, have the ability to predict the future. The role of citizens is merely to provide data to this end.

However, whilst the Singaporean state has for some time already asserted themselves at the head of a hierarchy of knowledge, their role is also diminished next to the reified Smart Nation. As demonstrated in the preceding section, AI engineers are reduced to tinkering with data inputs, whilst politicians and civil servants preside over the proclamations of AI. As a consequence, AI ascends above these other groups within the hierarchy of knowledge production. Though neither party, engineer nor politician, has full control over the process. This produces a foreclosed future (Bear 2016) in which the future is defined by AI and its supposedly objective outputs.

AI is clearly a key organising logic within the Singaporean state. Laura Bear calls such logics episteme of future, ways of knowing which shape how the future is imagined. As Bear argues, these "Epistemes are associated with hierarchies of expertise and political relations...They create foreclosed, abandoned, and unrealizable futures" (Bear 2016 496). By foreclosed, Bear means that certain narratives have so much cultural weight, that alternative futures become unimaginable. We can see these kinds of foreclosed futures at play in the sustainable AI conference which I described at the start of the chapter. The imperative to use AI was so strongly believed, that the idea of not using the technology, or even reducing usage, became unthinkable, even laughable.

Returning to that AI and sustainability event, why did everyone laugh? The argument that Singapore should attempt to reduce its use of data centres to preserve the environment was seen as illogical because it did not protect the expansion of Singapore's economy. As we saw this is a key imperative of the Singaporean government's policy approach, economic survival is central to decision making. The solution, therefore, to the environmental damage wrought by AI needed to be one which simultaneously protected the growth of the Singaporean economy. However, I think the answer runs perhaps deeper and is connected to the epistemology of AI.

This deeper logic becomes visible when we examine how AI systems are understood to function, especially their probabilistic basis. As described in the introduction to this thesis, AI does not create objective answers, merely answers that are good enough based on the available data, therefore, the 'right' answer is just a little more data away. The epistemology of AI, as presented by the Singaporean state via AISG is that if we can provide enough data those objective answers can be reached. Meanwhile, AI systems are predicated on probabilities which operate on the assumption of more data in the future. As a result, the logic of AI is both the source of the problem, and the sight of the solution.

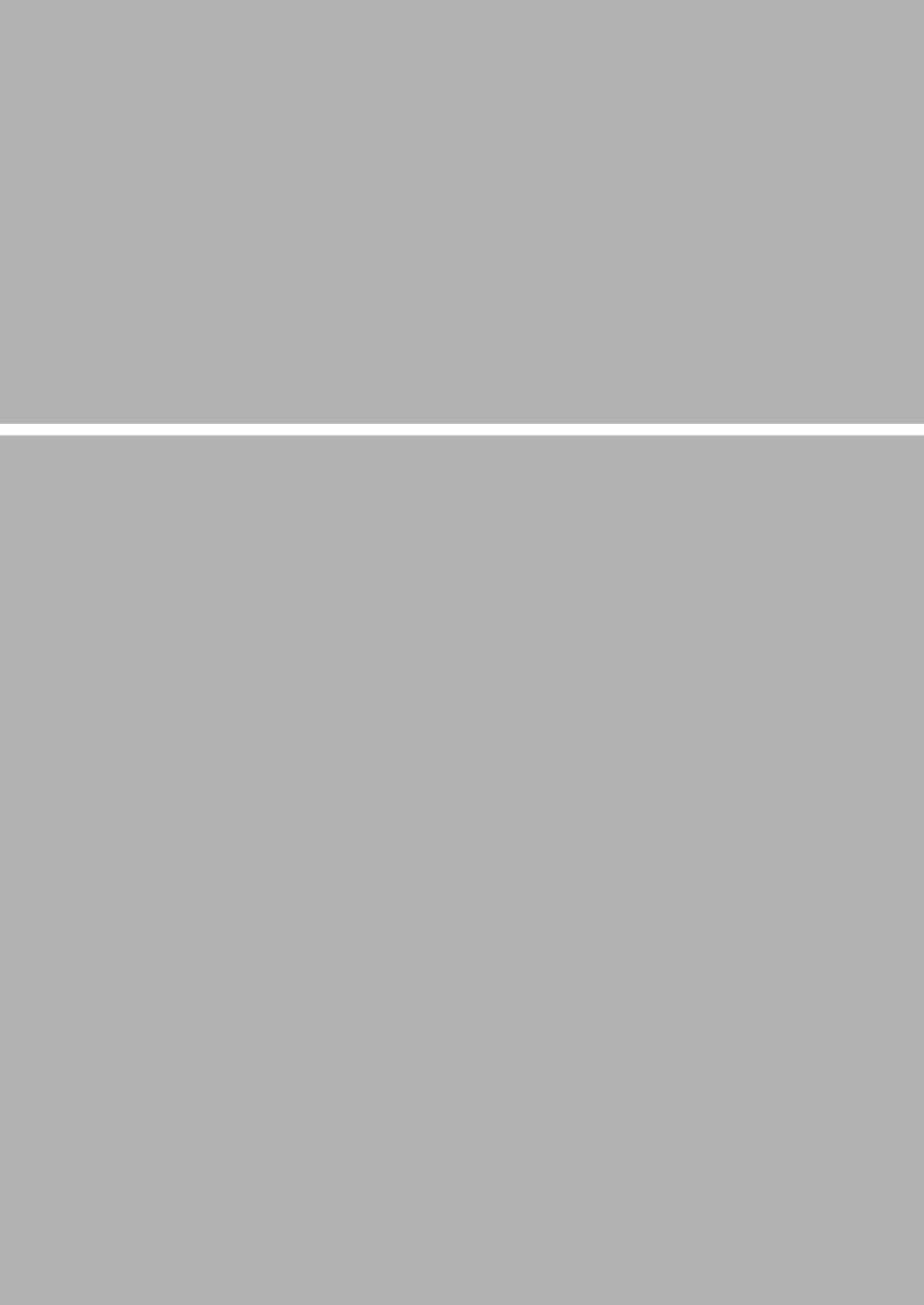
At another AI and sustainability event I attended, the speaker presented on how AI could be used to improve the sustainability of farming practices. By analysing the grazing patterns of goat herds, he argued, we could produce patterns by which shepherds could move their goats more efficiently. By doing so, more of the grasslands could be preserved by allowing areas more time to re-grow. I asked during the Q&A whether these efficiency gains would outweigh the energy requirements of AI systems. The speaker responded, fairly enough, that this would be hard to measure. However, he concluded, AI would likely also solve this problem. When I asked how, he told me that AI would help to find renewable energy solutions in the future.

This moment, and the laughing at the AISG sustainability event, reminded me of Prime Minister Loong's speech where he described an app which would help reduce the problem of excessive screen time. The solution here loops back through the problem, creating a never-ending spiral. Likewise, as explored in the previous chapter, statistics struggle to represent individuals. AI is again the solution by helping to parse the mountains of data produced by the Smart Nation. The solution, therefore,

is ever more granular statistics. As they described at the AISG event, AI tends to be biased against things not well represented in the data set. The solution? More data. And on and on.

The laughing at the AI Singapore event was because any future without AI has become unthinkable. Furthermore, how we reach that future is through AI, yet this is a foreclosed future because it creates an infinite loop. However, it is important to remember that no future is fixed. As Brown, Rappert and Webster (2000) argue the future is contingent, but it is also open to change at any time, studying futures they argue requires a careful balance between these two perspectives. It is important to remember that other immutable conceptions of future have come and gone. To quote Ursula K. Le Guin “We live in capitalism. Its power seems inescapable. So did the divine right of kings” (Le Guin 2020⁵⁹). Bear agrees, arguing that even the strongest foreclosed futures can be resisted simply by proposing alternative imaginings and epistemologies. This is something I will return to in chapters five and six, but for now, we turn to MUIS and how they respond to the foreclosures of AI as intermediaries of the state.

59 Le Guin (2019) Full Speech: Ursula K. Le Guin’s Passionate Defense of Art over Profits [10:13–10:23]. Accessed: 6 November 2025.



Chapter 3

The Future of Fatwa

INTRODUCTION: “AI IS HERE SO WE HAVE TO USE IT.”

I was, yet again, nervously waiting in Huggs to meet an interlocutor. Huggs is a Singaporean chain of coffeeshops and co-working spaces, which abound in the city’s CBD. During my fieldwork I found myself spending an unexpectedly large amount of time in their coffeeshops, and others like them, in part because my interlocutors chose them as locations to meet. As mentioned in Chapter 1, my attempts to conduct research in the offices of MUIS, and to contact GovTech, had been rebuffed. However, this did not preclude me from meeting MUIS staff outside the office in coffeeshops like Huggs. On that day, I was there to meet with Abdul, a MUIS researcher focused on the Islamic Ethics of AI use. I was nervous because I had been courting this relationship for three weeks already with a dinner (off the record), a second dinner (off the record), and this coffee meeting for which he was already 15 minutes late.

I had asked to meet because I wanted to understand how MUIS was implementing the epistemological ideals of AI and the Smart Nation. I was interested in what happened when the smooth ideals of algorithmic reason met the messy reality of religious governance. As the researcher doing the theoretical work of understanding the implications of that transition, Abdul seemed like the perfect person to help me explore that interface. Little did I know, Abdul’s role was far less theoretical than I had imagined. Abdul arrived after twenty minutes, and with coffee in hand we dove right in. Over the last year, it turned out, Abdul had been involved in a MUIS project to create an AI Fatwa bot. This AI would assist the Fatwa committee to reach non-binding religious opinions on emerging theological questions. The aim of this bot would be to function as a research assistant to the Fatwa committee, speeding up their processes and allowing them to remain ahead of technological developments.

However, Abdul had his misgivings about this AI project. He had been reading Farish Noor (2019), who argues that colonial use of mapping and census making was implemented to control and divide the region. In Abdul’s view, newer forms of data extraction, including those used to empower AI systems, could act similarly. Further, he was concerned about the implications of using AI on human cognition. Here he drew on the work of Joseph Weizenbaum, computer scientist, and designer of the first AI Chatbot ELIZA, to argue that outsourcing our intelligence to a machine would diminish our humanity. As Weizenbaum wrote, and Abdul

quoted, we “must strive to be a whole person...[something] instrumental reason alone cannot lead to” (Weizenbaum 1976, 280). Abdul linked this to an Islamic context through the work of Amana Raqaib who argues that under the concept of *Maslaha* Islamic ethics must aim to “maximise welfare for the majority or to prioritise the recognition of static intrinsic human values” (Raquib 2023, 73). For Raqaib, AI fails at both these goals because it harms many people in the process of its creation and does not value the intrinsic value of human cognition. The Quran, Abdul told me, even says, “O you who have believed, if there comes to you a disobedient one with information, investigate, lest you harm people out of ignorance and become, over what you have done, regretful” (Qur’an 49:6 Sahih International). It was this idea that using an AI could mislead the public which concerned Abdul most of all. As a result, he wanted to create a curriculum which would teach people how to go about using generative AI without being misled.

However, despite all these concerns, Abdul concluded, “but AI is here now, so we have to use it” – a sentiment which echoed the words I had heard at the AISG event on the environmental impact of AI. Despite his personal theological concerns about AI, Abdul’s job at MUIS, and by proxy as part of the state, was to implement AI into their processes. In several ways, this meeting at Huggs speaks to the way states act on two levels: as a collection of individuals, and as an institution. As an institution, MUIS had refused to engage with my research; however, individuals who worked within MUIS as researchers, on boards, and as religious scholars made up most of my interlocutors. In those interactions they tried to distinguish themselves from the organisation, as Abdul did in this meeting. We met not in Abdul’s office, but at a coffeeshop nearby. Further, he explained his personal misgivings about the AI project. At the same time, however, he outlined how those misgivings shaped his approach to conducting the implementation of AI anyway. Whilst Abdul was an individual member of the Muslim community, with his own misgivings about the theological implications of AI, he was also part of an institution of the state.

Up until now, this thesis has treated the state as a monolith by examining how the epistemology of AI technologies fit within the ideology of the PAP. However, in this chapter I explore what happens when algorithmic reason encounters the messy social realities of religious governance. In particular, I will show how managing the interface between government and community creates an authority bind for MUIS. I define an authority

bind as a situation where an organisation's authority is drawn from two contradictory sources. For example, MUIS draws its authority over the administration of the Muslim community from the state. However, this relationship to the state reduces the trust of the community—trust which is integral to their religious authority. This lack of trust caused many of the Muslims I met in Singapore to look abroad for theological opinions, something which has long been a concern of MUIS, who see this as a fragmentation of their authority. Further, as Abdul expressed in relation to AI, the turn towards religious scholars from abroad raises concerns at MUIS that Singaporeans will be misled by deviant teaching.

In response to this authority bind, MUIS has used technology to assert its vision of Singaporean identity. The latest among these attempts is the proposed AI Fatwa bot. However, when I discussed technological attempts to maintain religious authority with my interlocutors, some of whom worked at MUIS, they invariably recounted three stories which centred around the mismanagement of Ramadan in 2023. At first, I could not understand what these stories had to do with my questions about AI. However, as I will explore here, these stories express a dissatisfaction among the community with their engagement with MUIS. In this chapter I will describe these three stories and show how MUIS as an institution regurgitates the ideals of algorithmic reason espoused by the state.

I conclude that within the governance processes of MUIS, AI is imagined as smoothing the messy relations between the state and the Muslim community. Consequently, the anti-politics described in the previous chapter re-emerges. As the stories from Ramadan 2023 show, MUIS turns to data and technology to depoliticise contentious issues in the same way that the state sees data as being able to turn unruly social problems into technical glitches. However, in the case of MUIS this appears to instead worsen the relationship with the community who feel their voices are subordinate to technological systems. To contextualise the messy interface between the state and the Muslim community, I must first outline why that relationship has become so fraught in Singapore.

Theoretical Framework: Religious and Political Authority in Singapore

Established in 1968 under the Administration of Muslim Law Act (AMLA), MUIS is a statutory board of the Singaporean government. The organisation is governed by The Council of MUIS, which is comprised of the Mufti, the president, chief executive, and members assigned to the council by

the Minister of Muslim Affairs. The organisation is represented in parliament by the Minister of Muslim Affairs. MUIS is, therefore, intimately tied to the Singaporean state and the PAP.

However, the relationship between MUIS and the ruling PAP is complicated and contradictory. When the union between Singapore and Malaysia began in 1963, the ruling PAP had several concerns about their nation-building partner. Chief among them were racial politics, particularly the prioritisation of the Malay community who would be the majority race in this new country. The political elite within Singapore, who were mostly English educated Chinese, were concerned about the balance of power within Singaporean politics. As then Prime Minister Lee Kuan Yew wrote in 1962 prior to the merger, “the English educated want to be assured that the merger does not mean that [a] four to one ratio between Malays and non-Malays will apply in the Singapore section of the civil service” (Lee 1962, 78).

However, the merger was not to last long. In 1965, the two countries once again split. Race riots in 1964 are often cited as the reason the merger failed. In turn, these riots were blamed on the Malay community, and turned a political concern around race into an emotive one within Singaporean politics. In his famously tearful television speech after the split with Malaysia, Lee Kuan Yew assured the nation that “we are going to have a multiracial nation in Singapore...this is not a Malay nation. This is not a Chinese nation. This is not an Indian nation. Everybody will have his place” (CNA 2025). This was the beginning of a conscious policy of multiracialism within Singapore, wherein “Each ethnic group is allowed space to practice its own culture but is expected to transcend difference” (Abdullah 2016, 214). For their supposed role in the 1964 race riots, and because of their presumed racial loyalties to Malaysia, the Malay community was consequently perceived as failing to transcend their race, and thus as a potentially destabilising minority within Singapore’s new National project.

Though the Malay community of Singapore was viewed with suspicion by the PAP, the Singaporean state did not want to risk the ire of Malaysia by sidelining Malays completely. Therefore, the PAP sought a way to control the Malay community whilst simultaneously giving them a vested interest in the new state. They in turn aimed to signal to Malaysia that Malays would be protected. The result was twofold: first, Singapore’s new constitution acknowledged Malays as the indigenous population of

Singapore and offered them special protections; second, the MUIS was created in 1968. As a statutory board of the state, MUIS reports to the Minister of Muslim Affairs and is tasked with managing everyday Islam within Singapore. Through the Mosque Building Fund, they build and maintain Mosques. They run madrassa and design their curriculum. Further, they organise daily spiritual life, administering zakat and hajj as well as writing all mosque sermons in consultation with the Minister of Muslim Affairs. Via these sermons, MUIS became a useful tool for promoting the political messaging of the PAP in the Muslim community (Musa 2022, 116). By creating such an institution, the PAP was able to centralise management of Islamic religious life away from the disparate village mosques and institutions which had managed religious life prior to independence.

The function of MUIS as a mouthpiece of the Singaporean state is effectively illustrated by their roll out of the Singaporean Muslim Identity (SMI). In the Wake of 9/11, racialization of Singaporean Muslims shifted as Muslims around the world, and especially in minority contexts, were pressed to “prove their normalcy” (Echchaibi 2018, 58). As the Singaporean state scrambled to align themselves with the United States of America, their multiracial governance shifted towards a more proactive surveillance of Singaporean Muslims to pre-empt the influence of fundamentalism (Febrica 2010, 576). Under this new outlook, what primarily marked the Muslim community as deviant was no longer the Malay race but Islamic faith. As former PM Lee Kuan Yew argued, “I would say today, we can integrate all religions and races except Islam” (Abdullah 2016, 222). Consequently, the role of MUIS refocused on ensuring that Singaporean Muslims aligned with the normative expectations of Singaporean citizens.

MUIS was therefore tasked with creating the SMI (Singapore Muslim Identity). The SMI is a list of ten attributes the Muslim community should embody to be good citizens. Chief among them was the need to put their Singaporean identity above their religion. Signs that Singaporean Muslims may be heading down the path to extremism were thought to be as innocuous as not eating with non-Muslims (Ab Razak 2019). More seriously, critiquing the state could make you a “bad Muslim” under the SMI (Hassan and Abdullah 2022). The SMI principles were then distributed through the Mosques in Friday Sermons. Through the SMI, MUIS continues to assert a particular vision of what Islam and being Muslim should mean for Singaporeans.

This is not to suggest that MUIS is merely the state's mouthpiece, though the institution is sometimes seen in this way by my interlocutors. As Pasuni (2018) has shown, MUIS can push back against government policy. For example, in the 1970s and 80s the Singaporean government, in an attempt to control population growth, offered tax breaks for people willing to be sterilised. These policies disproportionately affected the economically deprived including marginalised parts of the Muslim community. At this time, MUIS pushed back by issuing Fatwa against sterilisation. Whilst MUIS is "formally dependent on the state, yet autonomous enough to challenge it" (Pasuni 2018, 81), association with the state offers legal and bureaucratic authority, which can be harnessed to resist State authority.

Therefore, MUIS is a unique case of religious authority. Even within Singapore, MUIS is the only religious organisation which is part of an otherwise secular state. Further, the PAP created the organisation not out of a shared religious affiliation, but instead, out of suspicion of the community, and fear of their larger, more Muslim neighbour. The creation of MUIS was, as a result, less aimed at governing Islam – spiritually or otherwise – and more so designed to control Muslims. Yet those working within MUIS do not want to be merely government functionaries, but also to guide the spiritual life of their fellow Muslims. To explore how the relationship between MUIS and the Singaporean government plays out, I turn now to an event which occurred during my fieldwork during Ramadan 2023. This was a story I heard multiple times, from various people, including MUIS staff, Muslims not affiliated with the organisation, and interlocutors who maintained a blurrier relationship with the institution. This latter category included, for example, Ustaz who were not employed by the government but who were still affiliated with and drew authority from MUIS.

Stories in Authority: Void Decks

Underneath Singapore's social housing, known colloquially as HDBs, are empty spaces known as void decks. These spaces serve a myriad of social purposes: Chinese Singaporeans celebrate Hungry Ghost Festival in the void decks, weddings were formerly held there, children played football there (although this is against the rules), and I even once met a group of budgie enthusiasts comparing birds at a void deck in Hougang. Void decks hold significance because they are one of the few communal spaces which remain after many Singaporeans were moved out of villages and into high rise 'HDBs' in the 70s and 80s as part of the state's urbanisa-

tion policies (Loh 2009). In fact, those bird men in Hougang were given their first budgies by the state as part of a deal to coax them away from the Kampong and into the city. For the Muslim community in particular, void decks have traditionally been a space for Tarawih prayers during Ramadan. These prayer spaces acted not only as religious sites, but also as meeting places for elderly, where support was provided for under-served members of the community.

During the early pandemic years, none of these social activities could happen, except maybe the illicit football. So it was with excitement that 27 HDBs around Singapore applied for and received approval to hold Tarawih prayers in their void deck for Ramadan 2023. However, one week before Ramadan began, MUIS made an announcement which said:

“After re-evaluation, MUIS has concluded that there will be sufficient prayer spaces in our mosques during Ramadan. Accordingly, MUIS and our mosques recently issued rescindment letters to the Qaryahs (neighbourhoods), as there was no longer any need for prayers to be conducted at void decks.”

Organisers were frustrated, and one told independent media outlet Rice Media, “I cried for 15 minutes because all my efforts had been put to waste.” Many went on to complain to both MUIS and their local MPs, leading to a retraction. However, I can find no official retraction on the MUIS website under either their press releases, or the “MUIS clarifies section.” The only official statement came from the Facebook page of then PM Lee Hsien Loong who posted, “I am glad that after discussions with MUIS, we have come to an understanding, and MUIS has been able to allow many qaryah groups to proceed with their original plans.”

Despite the reversal, for many of my interlocutors the damage had been done. They felt that such decisions undermined community spirit by removing communal space. As one activist who had reported on the void deck incident told me,

“This has been going on since the 80s as a result of people moving out of their Kampong, their old neighbourhoods and they didn’t have a communal space to conduct religious activities so then they turned to the void decks of HDB flats.”

Activities like void deck prayers are not just administrative, and the decision to cancel them based merely on data about mosque capacity seems to show a lack of understanding of the community's needs. As my interlocutor continued, "...this upset a lot of people because...a lot of people have nostalgia...it's an emotional thing." This failure to understand the emotional aspect of void deck prayers also led some to question whether the data the decision was based on was valid. As one interlocutor told me:

"Firstly, they never showed that data. Secondly, I mean the people on the ground can tell, it's not the same, just because on average we have enough space but not everyone lives everywhere, some areas have more Muslims, and those areas are underserved so why won't you allow them to pray at the void decks?"

This interlocutor concluded that the void deck decision had been made by the PAP ministers and was merely being administered by MUIS. In fact, the persistent rumour I heard was that this conclusion is close to the truth, as an organiser of void deck prayers told me,

"I've spoken to some people, and they've said that it was not entirely MUIS decision, but it was pressures from other ministers or other agencies in Singapore, which look into social affairs in Singapore."

In the case of the void deck incident, the decision was seen as bureaucratic, a failure to understand the communities' emotions in favour of following the data. However, with this mistrust came an inkling that this decision in fact was a government one. Even though, at least publicly, it was MPs and even the prime minister himself who turned the decision around, it was the association with the state that undermined MUIS authority.

The MUIS Authority Bind

The historical and political context of MUIS' creation causes a kind of contradiction which I am going to refer to as an authority bind. As a result of their intimate relationship with the state, MUIS has a tremendous amount of administrative authority. Simply put, they influence all religious institutions in Singapore. As we saw in the story of void deck prayers, even religious affairs which happen outside of official institutions like the mosque must seek approval from MUIS. Yet the source of this authority, the PAP government, simultaneously undermines their

standing in the community. As the void deck prayers incident proves, MUIS proclamations are perceived as coming not from the religious organisation, but from the PAP. Unsurprisingly then, given the PAP's long and well documented history of mistrusting the Muslim community, my interlocutors concluded that this decision did not have their interests at heart. This must be particularly vexing for the staff at MUIS who are part of the community and of the state simultaneously.

If we assume rumours around the void deck incident to be true, then MUIS agreed for the prayers to go ahead, only for government officials to step in and, for whatever reason, cancel them. MUIS was then left with the unenviable job of communicating the cancellation. For the MUIS staff involved who likely grew up with void deck prayers (given that this tradition began in the 1970s), this must have been frustrating. Then, to add insult to injury, the reversal of this decision came not from MUIS, but from Prime Minister Hsien Loong. Despite the role of the PAP, the void deck incident undermined trust in MUIS, who my interlocutors perceived as functionaries of the state who failed to effectively advocate for their interest.

As I will now explore, theories of religious authority suggest that instances such as these serve not only to diminish trust in the administrative capabilities of religious institutions, but also their spiritual authority. For Campbell (2010), religious authority can be divided into three categories 1) legal which covers the ability to administer religiosity and assert a particular interpretation of faith; 2) traditional, or the ability to control historical institutions of faith which produce those interpretations such as madrassa and Fatwa committees; and finally 3) charismatic authority, or the ability to compellingly communicate with the faith community. Bano (2018) argues that in an Islamic context this authority is particularly associated with scripture. He argues, therefore, that authority is derived from textual knowledge, the moral authority to assert that knowledge and the ability to relate scripture to the realities of the time. Whilst these concepts differ from Campbell's, they do widely converge. Textual knowledge is generally conferred by traditional institutions, as Bano asserts, like Al-Azhar University in Egypt. Further, as Campbell and Bano argue, moral authority can both be helped and hindered by relationships with the state, or what Campbell calls legal authority. Finally, charismatic authority and relating scripture to the present are of course intertwined.

However, I am inclined to agree with Alatas (2021) that the distinctions between these different categories of authority are not necessarily helpful because of how intimately they are connected. Alatas (2021) argues that the creation of religious authority is the work of operating between governments and the community. He refers to this process of managing these different relationships through consistent engagement and dialogue as labour. Through labour, Alatas claims that religious authority is based on the ability to negotiate different publics, and that making scripture relevant to the political and historical moment is a product of that negotiation. It is on this messy interface between state and community that MUIS struggles to assert authority in the story of void deck prayers. For this reason, despite the dispute over void deck prayers being largely to do with administrative matters, it diminished not only their authority in legal, administrative matters, but also the institution's charismatic and traditional authority.

MUIS finds itself in a bind when it comes to religious authority. Its relationship with the Singaporean state means that it holds a huge sway over everyday Islam in Singapore. Conducting daily Islamic practice means engaging with MUIS institutions and, by proxy, the PAP government. However, drawing authority from the state means also acting as an intermediary between the government and the Muslim community. For many Muslims in Singapore, the state, in the form of the PAP, is an institution which has historically marginalised them. Consequently, the association between MUIS and the state is widely seen in an unfavourable way. This bind is emphasised whenever MUIS announces news which is unpopular. Interestingly, whilst it is widely acknowledged that the government is the source of many unpopular announcements, it still undermines MUIS authority. I would argue this is because, as my interlocutors perceived, these announcements as a failure to do what Alatas calls “labour”. My interlocutors felt that in the case of the void deck prayers, MUIS did not effectively communicate across the messy interface between the state and the community. The result is that the community did not feel represented. However, given the authority bind MUIS finds itself in, it is hard to imagine a different outcome. This is illustrated further through another story from Ramadan 2023, wherein this issue of representation reappears.

Stories in Authority: Migrant Workers and Hari Raya 2024

Migrant workers make up a significant portion of the construction workforce in Singapore. As of June 2024, there are around 442,900 migrant

workers with permits to work in construction (MOM 2024). Despite their importance to the construction industry, Wee, Lam and Yeoh, argue that the construction industry uses strategies of detachment which make these workers less visible in Singapore (Wee, Lam, Yeoh 2022, xxii). This includes housing them in dormitories on the outskirts of the city, transporting them in the back of lorries with construction materials, and generally excluding them from public spaces. These exclusionary practices are supported by a lack of regulation from the state. For example, ministers refused to enforce regulations which would prevent the transport of workers in lorries, citing traffic concerns. Further, during the early years of the pandemic, 90% of covid-19 cases in Singapore “occurred among the 300,000 migrant[s] construction workers” (Yeoh, Wee, Lam 2022, i).

Whilst there are no official statistics on the national origins of migrant workers in Singapore, a 2017 study found that 250,000 of the country’s migrant workers were South Asian. Of those, 120,000 were from Bangladesh, of whom many are Muslim (Yeoh, Wee, Lam 2022, xix). These workers therefore are a significant but marginalised part of the Muslim community in Singapore.

During Ramadan 2023, the Singapore Bangladesh Society (SBS) circulated a memo from MUIS asking migrant workers to avoid mosques on Hari Raya. The now retracted memo stated that workers performing prayers in their dormitories would “help to avoid overcrowding and road blockages and ensure the health and safety of everyone”. Coming just weeks after the void deck incident, the announcement was met with understandable anger and scepticism. Was there enough space in the mosques or not? It was rightly pointed out that it was unfair to ask migrant workers to avoid the mosque while no such message was given to their Singaporean counterparts. Following the public furore, MUIS published a clarification on its website. The statement said that the migrant community “have never been segregated from our community or our mosques”, and concluded, “We regret the wording of the SBS circular.”

Many accepted this clarification, with one of my interlocutors saying, “So that was just poor...communication.” For others, though, the claim that the whole issue was caused by poor communication only made the situation worse. As one interlocutor told me “The response from MUIS was “oh it was just poorly worded” – You know that is very convenient and what does it even mean?” The feeling was that MUIS was refusing to take responsibility for the misstep. As another interlocutor explained:

“The response is people don’t understand. The migrant workers misunderstood the statement. Every single time it is the community who is not understanding what you smart folks are saying. That’s the first thing and secondly, if after 58 years of independence the community doesn’t understand, then you are not doing your job.”

Once again, as with the void deck prayers, the perception was that MUIS did not represent the community by excluding Muslim migrant workers. However, what really infuriated some of my interlocutors was the failure of MUIS to properly engage in dialogue. Instead of listening to the community and apologising for the mistake, MUIS had turned the incident into a failure of the community at large to understand their proclamation. As with void deck prayers, MUIS were seen as not representing the community in all its diversity by excluding the migrant community, and subsequently through its messaging deferring responsibility.

Representing a Community of Diversity

Once again, the exclusion of migrant workers was seen as a failure to stand for the communities’ interests in favour of the governments. In this story we can see how the historical discrimination of the state can filter into the decisions of MUIS despite their best intent. The view that migrant workers and their safety can be excluded is starkly shown by COVID-19 rates and the existence of the lorry rides. The Hari Raya prayers incident suggests that this disregard was being replicated within MUIS. Whilst this is another case of MUIS struggling to manage the messy interface between the state and their constituents, it is also another part of the authority bind MUIS finds itself in – the difficulty of representing a diverse community.

The Singaporean Muslim community is diverse, that goes without saying. For my interlocutors, the Hari Raya incident was an example of how MUIS could not represent all that diversity because of its relationship to the state. However, this was not the only such incident in recent years. In testament to the intimacy of the relationship between MUIS and the PAP government, the religious organisation was informed a few months early that Singapore would be repealing 377a, the law which made same-sex relationships illegal. Informing the religious organisation early was deemed necessary so that MUIS could strategize how to communicate the change. In particular, the repeal was seen as contentious because of its potential to cause a rift between liberal and conservative parts of the Muslim community. Consequently, MUIS decided that the safest approach

would be to take a middle way between the groups by neither supporting nor opposing the government. Ultimately, this served to make everyone unhappy, as one interlocutor told me with regards to the Mufti's position: "He was roundly criticised for that. Especially by conservatives, but also by liberals...I would say the easiest way to put it is that he was waffling."

Behind the scenes, the Mufti was aware that this was about to become a thorny issue for MUIS. An interlocutor and Ustaz for MUIS informed me that at a meeting before the repeals announcement the Mufti told them, "If anyone is going to take the fire let it be me because...if we are not sure what to say, it is best that we don't say anything about it. Because we might make the mess even messier." Internally, the repeal of 377a was seen as a no-win situation – they could not outright contradict the PAP, and if they did it would upset liberal parts of the community, and yet full support would create tension with conservatives. In the end they decided to say little definitively on the subject which allowed both sides of the debate to conclude that MUIS did not represent their voices. This is again surely a frustrating situation for MUIS staff who likely hold opinions which run the entire gamut of liberal to conservative. However, their roles required them to act not as individual members of a community, but as representatives of an institution which is in turn an intermediary of the state.

Due to their dissatisfaction with MUIS, my interlocutors from across the conservative to liberal spectrum sought their religious education from outside Singapore. This is well encapsulated by a mother and son that I met. Whilst the son was politically engaged, including sitting on several MUIS boards, and was interested in seeking out a 'liberal' teacher, his mother was far more conservative. For him it was hard "finding a teacher who is progressive enough and learned enough" within Singapore. His mother, who is deeply invested in the traditions of Islam, sought someone who could help her to improve her Quranic Arabic. She is so invested in following tradition, the son explained, that when flying internationally she asks him to calculate when they will need to pray mid-flight. Yet despite being from different ends of the conservative-liberal spectrum, both family members felt dissatisfied with the ability of MUIS to provide for their spiritual needs. Interestingly, they both found teachers who suited their needs in Saudi Arabia who they now meet via facetime.

Of course, this is nothing new in Singapore. As Saat (2018) shows, Singaporean Madrassa students have historically chosen to receive their

university degrees at Al-Azhar University in Egypt. This is a trend that continues to the present and holds true for many MUIS authorities, including both the current Mufti and his predecessor (Saat 2018, 58). This is not surprising, as Singapore's Muslim population is small, with little motivation to provide world class tertiary studies in Islamic Sciences. The link with Egypt's Al-Azhar is also unsurprising given its reputation as a moderate school which follows the Shafi'i madhab, the same legal tradition used throughout Nusantara. It is also not something unique to Singapore, as much of the Muslim world looks to al-Azhar for religious knowledge. This relationship does, however, demonstrate that religious authority at least in terms of Islamic knowledge has consistently been drawn from outside Singapore.

What is new is how MUIS is responding. At a meeting in 2021, MUIS staff explained to me that their primary concern was on managing misinformation online. Their apprehension was that when Singaporean Muslims went online to find religious information, they would encounter deviant teachings, or Islamic practices which would not fit within multi-racial Singapore. This outcome went against their institutional role to assert the SMI, which aims to inculcate among the local Muslim community a Singaporean identity that is tied to the state's conception of multi-racialism and modernity. To counter religious education found online, MUIS has turned to SEO tactics (Search Engine Optimisation). Using their proprietary app MuslimSG, Google statistics, and frequently asked questions on their query hotline, they identify trending topics. They then write articles on these topics which promote SMI principles. By using SEO, they ensure that these articles are the ones which appear first when Singaporean Muslims search religious questions online.

This focus on how internet technologies effect religious authority is central for MUIS. At a conference in 2022, current Mufti Dr. Nazirudin Mohd Nasir gave a keynote in which he emphasised the challenges social media technologies bring to religious discourse, saying:

“How do we address...controversial and confrontational hermeneutics, i.e. the reinterpretation of religion and its laws that challenge mainstream and traditional viewpoints? We are increasingly dealing with exceptionally complex issues, made more challenging by a social media that democratises religious and social discourse.”

This view that the internet challenges religious authority was particularly prevalent in the early days of the internet. The idea was that given the diversity of voices, and the democratisation of information available online, people will turn away from traditional leaders. In their study of Muslim politics, Eickelman and Piscatori (1997) argued that the rise of print media and widespread education would lead to a fragmentation of religious authority. Over a decade later Robinson (2009) agreed, arguing that lay believers online were able to use internet affordances to challenge traditional authorities. In his view this meant that “for growing numbers of Muslims, Islam has become a matter of individual conscience, individuals have come to interpret the faith” (Robinson 2009, 340).

However, empirical studies of online religion seem to contradict these conclusions, even in their earliest guises. For example, Barker (2005), who did some of the earliest research on new religious movements (NRMs) online, concluded that whilst the internet did risk the authority of charismatic leaders of NRMs by exposing their followers to outside influences, the internet also offered new tools for the extension of their control. In relation to Islamic religious authority online, Bunt’s (2003) early research of Islam online argued that traditional authorities were likely to maintain importance given the huge investment they had made in this new technology. Further, he argued that the internet would become just another medium for scriptural knowledge, as print, animal skins and stone tablets had before it (Bunt 2003, 211). These early empirical studies predicted that rather than undermining religious authority, the internet would transform and, in some cases, extend it.

Later studies of religion online seem to bear out these early predictions. As Knowles (2013) discusses, internet spaces have created new possibilities for traditional gate keepers to assert their authority, such as through the moderation of online spaces. Further, Selby and Sayeed (2023) show that Canadian Muslims judged the trustworthiness of online sources based on their affiliation with well-known Islamic institutions. In Southeast Asia, Solahudin and Fukhuroji (2019) demonstrate that whilst many online scholars have emerged as new authorities in Indonesia, these scholars are still frequently drawn from mainstream religious authority. They found that many of these new religious authorities were educated and held certificates from established religious seminaries. Solahudin and Fukhuroji conclude that this has extended the influence of traditional authorities who can now reach different audiences online.

Further, as Slama and Barendregt argue, it is not simply a case of undermining or supporting authority but that “today’s Muslim Southeast Asia is a novel constellation of interfaces...facilitated by new media, which provides opportunities for both the (re)assertion of authority and its questioning” (Slama and Barendregt, 2018 19). Bunt makes the case that non-traditional authorities can use their digital nativism to engage specific groups not represented by mainstream authorities (Bunt 2018, 65). However, Bunt concludes that the core content, namely scripture and traditional forms of knowledge, remain durable. This means that whilst traditional centres of authority may be outmanoeuvred, it is still interpretation stemming from their teaching which these new authorities spread.

What the theoretical literature suggests, therefore, is that in general religious authority online follows the patterns of religious authority offline. As we have seen, the choice to look abroad for religious education for Singaporeans, at least among my interlocutors, was dissatisfaction with the ability of MUIS to represent their interests. As we understand from preceding sections, because of its relationship to the Singaporean government MUIS struggles to engage in the labour necessary to assert religious authority in Singapore. This section shows how authority is further divided by the diversity of the community. When transmitting the state's policies, as with Hari Raya and the 377a incident, MUIS frequently find themselves in a situation where they cannot avoid disappointing large segments of the community. This drives Singaporeans to seek religious authority abroad. However, whilst the literature and empirical examples suggest that online authority is correlated with institutional power offline, MUIS views the choice to seek religious knowledge abroad as a technological problem. Interestingly, the solution to that problem is imagined to be technological. To explore why this is, I turn to one final story from Ramadan 2023.

Stories in Authority: Hari Raya Announcement 2023

Ramadan 2023 was a difficult one for MUIS. In the first year since the pandemic measures were lifted both the void deck prayers and migrant workers incidents had shaken confidence in MUIS authority, at least among the Singaporean Muslims I had met. Still, there was one more hurdle for MUIS: announcing the end of Ramadan. For several years, the announcement of Hari Raya Puasa has been a contentious issue in Singapore. In 2022, MUIS announced that Hari Raya would be celebrated on May 3rd, a day later than neighbouring Malaysia and Indonesia. This

caused uproar in the community, many of whom celebrate across the border with family in Malaysia. MUIS explained at the time that the discrepancy was caused by the difficulty in sighting the moon in Singapore because of cloudy skies. Instead, they used astrological calculations to predict the location of the moon. These calculations were agreed upon by the MABIMS countries (Brunei, Indonesia, Malaysia, and Singapore).

The incident brought into question how MUIS was determining the Hijri Calendar. How could Malaysia and Singapore sight the new moon on different days given their geographic proximity? If the same astrological requirements are observed by Malaysia and Indonesia, then why the discrepancy? As one Singaporean on the MUIS Facebook page commented “We are not questioning when is the Hari Raya [sic]. What we don't understand is, why these 4 Muslim countries cannot come to one decision as to when is the Hari Raya and be steadfast about it otherwise it will be maslaha (public interest) to many.” Another stated, “If the new moon would have been sighted this evening, would it have changed anything? If not, why did you even attempt to do so? Setting a date for convenience is not in the right spirit.” However, many of the comments on the Facebook announcement were positive, thanking the Mufti for his clarification. Once again, this is a case of the MUIS authority bind. Agreement over the date of Hari Raya is regularly a point of contention in Indonesia and Malaysia. Yet, Singaporeans feel a particular irritation with MUIS because of its relationship to the state, which casts it in antagonistic terms with the community they serve.

Despite its strong religious administrative authority, MUIS still struggles in cases like this one to assert their authority. MUIS staff who I met with in 2022 reflected on the Hari Raya incident which was caused by anxiety over tradition. They argued that the use of astrological calculation instead of sighting the moon by eye had raised concerns over whether MUIS was correctly following tradition. As the 2022 clarification explained, the new methodology agreed upon in 2021 was “based on more than 700 data points of crescent sightings from around the world.” The feedback they had received showed that the community did not trust the use of data to make such important determinations. They even considered posting a video of the Mufti going out to sight the moon. No video was ever posted, possibly because it would contradict the explanation that Singapore was too cloudy to use this method.

In their 2022 statement, MUIS acknowledged that the discrepancy over Hari Raya dates would persist and perhaps even become more common. Therefore, in 2023 MUIS pre-emptively put out a statement explaining its approach to determining the end of Ramadan. Despite their proactive approach, there was still some grumbling from the community over the announcement, perhaps also prompted by the other MUIS missteps of Ramadan 2023. Despite their control over religious administration, there is still widespread mistrust of religious decisions from MUIS. In the case of the Hari Raya calculation, this was compounded using technology. Even though this approach was agreed upon by several countries in the region, it still made Singaporean Muslims nervous. Whilst MUIS concluded that this was caused by a mistrust of the technology, the stories of authority from across Ramadan 2023 suggest a different story.

The MUIS AI Fatwa Bot

As Ramadan 2023 demonstrates, MUIS finds itself in an authority bind caught between its contradictory demands as a statutory board of the State, and as a community leader. They draw administrative authority from the State, but that relationship undermines trust from the community and therefore undermines their ability to engage in 'Labour'. MUIS tends to construct these tensions around religious authority, at least in part, as a technological issue because of the role communication technologies have played in democratising access to religious authorities overseas. The anxiety that internet technologies diminish the institution's authority has also been transposed onto emerging AI technologies. As Abdul, who we met in the beginning of this chapter, explained, his primary concern about AI technologies is that Muslims would seek its religious advice and be 'misled' by misinformation. Similarly, an Ustaz who worked in content moderation at a social media company told me that they already saw how AI amplified existing problems of misinformation online. Another Ustaz working in tech seconded this view and was especially concerned with the ability of generative AI to produce convincing images which could be used to corroborate false narratives on the internet. Despite these apprehensions about AI technologies, they are still seen as a possible solution to MUIS' authority bind.

This contradiction should not come as a surprise. As MUIS staff explained to me, they already use internet technologies to try to counteract these authority issues. As we saw earlier, MUIS already implements SEO tactics to try and influence where Singaporean Muslims get their religious information online. Further, what unifies the stories of authority from

Ramadan 2023 is the way in which MUIS leaned on technology to smooth the communication of unpopular news. In the void deck prayers incident, they argued that data showed there was enough space in the mosque. With the exclusion of migrant workers on Hari Raya, data then showed that there was not enough space. Finally, in the case of moonsighting, appeals were made for the use of data and algorithms to determine the Hijri calendar and explain why the date differed from Singapore's neighbours.

Just as concerns about the internet have persisted and transformed while AI emerges, so have hopes that technology could also hold the answer. Consequently, MUIS now turns to AI for solutions. In October of 2023 MUIS was invited to participate in a Google run event called "AI trailblazers." Over the course of the event, members of MUIS staff worked with tech experts to develop a minimum viable product based around AI technology. These minimum viable products aim to show that a technology can be used to solve a problem before the technologies are fully developed. In this case, MUIS aimed to use AI to speed up the research process of its AI Fatwa committee. This initial AI model for this project was built on top of Google's proprietary generative AI, Gemini. Since then, the AI Fatwa lab was formed and has begun to fully develop the bot. Unlike the version built in October 2023, the updated Fatwa Bot is being made with ChatGPT as its underlying software. However, they are not using the commercially available OpenAI product, but an adapted version which has additional software provided by the Singaporean state's technology agency, GovTech. This use of ChatGPT by the State is likely a result of Singapore's large stake in OpenAI, purchased via the government's investment arm, Temasek.

This is part of an increasing investment in AI by the Singaporean state, which between 2019–2023 invested 500 million SGD. In that time, OpenAI's ChatGPT became integrated into the software of Singaporean Civil servants, and 900 million SGD was committed to the research and development for AI, robotics, and super computers (Tham 2019). In early 2026, the government doubled down on their commitment to AI investing 1 billion in AI development until 2030 (MDDI 2026). Meanwhile, in May of 2026 the Singaporean Government signed a memorandum of understanding with OpenAI who in turn announced that its first overseas lab would be located in Singapore with an investment of 300 million SGD in the project (Open AI 2026). These investments make it clear that the

Singaporean State sees OpenAI as a key partner in its AI development strategy, and likewise, Open AI sees Singapore as a vital market.

When I met for coffee with the head of the AI Fatwa Lab and Abdul, the lab lead explained that the aim of this new system was not to replace the Fatwa committee. This is an idea reiterated by the Mufti in his address at the Fatwa in Contemporary Societies Conference where he stated, “We are not suggesting for AI to replace the Fatwa Committee, Mufti or religious leaders – some of us still need our jobs for now.” Instead, the AI Fatwa bot will act as a machine in the loop. A play on the widely used concept within AI ethics of “human in the loop” which argues that to maintain human agency, a human overseer should vet all algorithmic derived decisions (Enarsson, Enqvist and Naarttijärvi 2022). In the case of the AI Fatwa Lab, all Fatwa committee decisions would be supported by an AI which would boost the speed and scope of the research process. The bot, which is currently being trained on a corpus of MUIS religious and legal decisions, will be able to analyse rulings from throughout Singaporean history, with the idea that this would be too much to read for individual members of the committee.

The bot will not only look at religious texts but will also consider the wider legal frameworks of the Singaporean state. The bot is also being trained with scientific and social scientific texts allowing the system to consider what the head of the MUIS AI Fatwa lab called “thick data”. This way, the bot will produce religious rulings which cater to the specific needs and legal environment of Singapore. When I asked him what he hoped the AI Fatwa bot would achieve the head of the fatwa lab told me that in the long run he imagined it rolling out to the general public to combat online misinformation. He envisioned every Singaporean Muslim having the AI Fatwa Bot on their phone to provide rulings on newly arising issues, rather than turning to online advice. At this point, Abdul jumped in, “that is many years in the future.” What is happening here? Why is AI seen as such a viable solution to the complex sociological problems that MUIS faces in Singapore?

I would argue that the allure of technological solutions is an example of how the Singaporean state's ideological and epistemological approach to AI filters down into agencies like MUIS and gets regurgitated into policy. Further, the stories of Ramadan 2023 show how the epistemological view of AI becomes alluring for MUIS.

Therefore, I would argue there are three key takeaways from the MUIS Fatwa Bot project to consider. First as we explored in the preceding chapter, by analysing more information than any individual can, algorithms are given an aura of objectivity (boyd and Crawford 2012). As the lead engineer of the AI Fatwa Lab emphasised, the ability of AI to consider more texts than any single committee member ever could was a central motivator of the project. The appeal of this aura of objectivity is its ability to defer authority to a ‘non-political’ actor. If AI systems are objective, or, to put it in the words of the PAP, “pragmatic”, then their choices can be construed as non-political. We can see how the perceived objectivity of data is already enacted in the stories from Ramadan 2023. For example, when announcing something contentious, MUIS continually relied on appeals to data. This is useful to an organisation like MUIS who manages the messy interface between state and community. They are frequently in a no-win position, as in the case of the repeal of 377a, and data’s aura of objectivity can shift authority away from the organisation.

Second, data is seen as able to operate smoothly across scales. As Aradau and Blanke (2022) explain, by using data about individuals to predict group behaviours and then extrapolating those large-scale trends to understand the behaviour of individuals within that group, data is seen as meaningful in any context. As we saw in the previous chapter, this perceived ability of data to work across differences means that lawmakers turn to data to appease all stakeholders, even those who are not consulted. This produces what Zandbergen (2020) and Cardullo (2021) refer to respectively as anti- and post-politics, in which members of the public are not consulted and instead there is an appeal to ‘trusting in data,’ which is seen as a reliable stand-in for all perspectives. Likewise, this is an alluring offer for MUIS, who as we have seen must operate across scale, between state, community, and individual, but also across difference. The stories from Ramadan 2023 and the repeal of 377a show how MUIS struggles to represent the diversity of the Muslim community. If the AI Fatwa Lab is a success, its creators hope to roll it out to the public so that no religious questions need go un-answered. This also has the advantage of meaning that every Muslim in Singapore will have access to a tailored answer to their question and circumstance. Consequently, the Fatwa Bot will not only provide ‘objectivity’ at a national level, but also for everyone. A replication of the “smooth” anti-political governance we saw in the AI epistemology of the Singaporean state where data is able to offer answers at all scales.

Finally, these two aspects– the ability to work across scale, and the aura of authority– are seen as able to mitigate an apparent contradiction. As we have seen, MUIS is concerned about the influence of internet technologies on their authority. This is in part because of the historical and political conditions which brought about the creation of MUIS, which aims to centralise religious authority over the Muslim community within the Singaporean State both geographically and administratively. The introduction of an AI system therefore seems contradictory because it defers authority to an outside influence. After all, whilst trained with local data, the MUIS AI Fatwa Bot is still built on top of ChatGPT, an OpenAI product developed outside Singapore using data which is not specific to the Singaporean context. However, this is mitigated for two reasons. First, as the lead engineer explained, the Fatwa Bot is trained not only on religious rulings, but also social science papers and non-religious Singaporean laws. The AI is thus perceived as able to work at the Singaporean scale whilst using global data. Secondly, as already described, the Fatwa Bot is seen as a non-political actor because of its aura of authority. Therefore, despite being an authority from outside MUIS, it is not perceived as such.

CONCLUSION: RELIGIOUS AUTHORITY AS A TECHNICAL PROBLEM

In many ways, Abdul's position on AI reflects the broader governance position that MUIS occupies. Although he personally and religiously disagreed with how AI functions, his institutional role required him to envision how it could function within the organisation. Similarly, many individuals working within MUIS may not have personally supported the pronouncements issued during Ramadan 2023, but their institutional role within the state apparatus compels them to communicate and enforce them. I refer to this tension as the authority bind. Further I show how the structural entanglement between MUIS and the state causes the organisation to regurgitate the state's epistemological approach to data and AI. As chapter two and the following interlude have shown, turning towards the epistemology of the state fundamentally transforms sociological and political issues into technical ones imagined as solvable through technological innovation. We see this again in the context of MUIS wherein rather than confronting the social roots of religious contestation, MUIS, caught in the authority bind, frames these challenges as technical problems solvable by tools like AI.

MUIS has long functioned as a mechanism for the state to exercise control over the Muslim community. Initially that control aimed to resist Malaysian influence over Singaporean Malays after the separation in 1965. MUIS's role was then reasserted and reframed after 9/11 and with the introduction of the Singapore Muslim Identity (SMI), now aimed at resisting not just Malaysian religious influence, but the authority of global Islamic actors by promoting a uniquely Singaporean Islam. The internet, however, destabilises this position by connecting Singaporean Muslims to a transnational religious discourse beyond MUIS's control.

This historical and political backdrop generates the authority bind that continues to shape MUIS's actions. As the stories from Ramadan 2023 illustrate, MUIS is frequently caught between adherence to the state and accountability to the community. Its position within the state grants it authority over Islamic institutions, but this comes at a cost. In cases like the ban on void deck prayers or the exclusion of migrant workers from Hari Raya celebrations, MUIS serves as the vehicle for unpopular state messaging. Open resistance to such policies risks institutional survival. Compliance, on the other hand, breeds distrust within the community. This bind inhibits the kind of bottom-up, dialogical religious authority that Alatas conceptualises as labour.

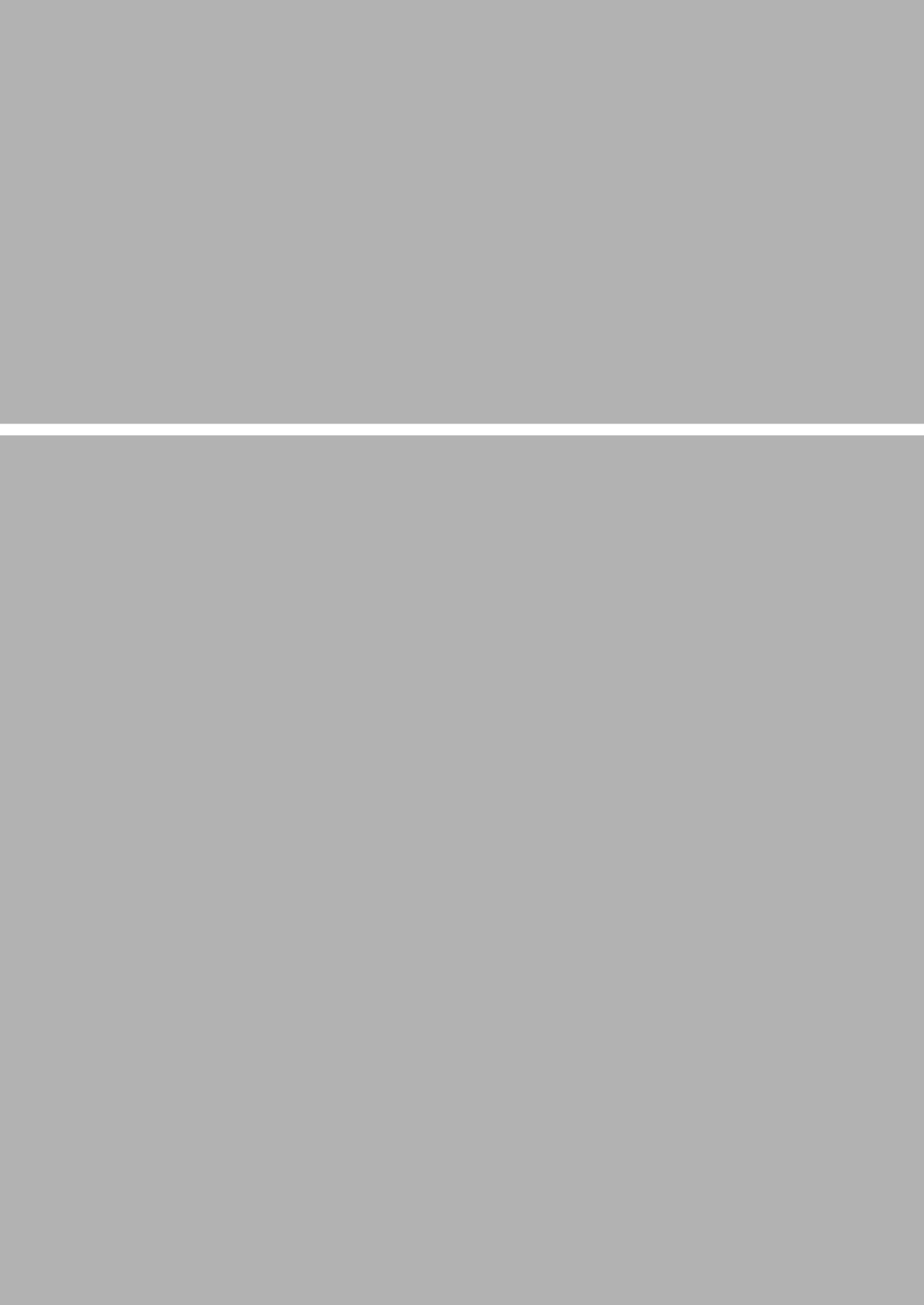
Despite knowing that many of MUIS's pronouncements likely originated from the PAP, my interlocutors directed their frustrations at MUIS itself, highlighting the intermediary role it plays between the state and a diverse Muslim community. The reaction to the repeal of 377A underscores this complexity. No stakeholder felt satisfied, and the Mufti himself acknowledged it was a no-win scenario. The authority bind, then, is a structural position. MUIS must navigate the messy interface between a centralised state and a pluralistic, globally connected religious community. For those within or adjacent to MUIS, this bind was not abstract, but deeply felt and frustrating.

In this context, many of my interlocutors turned to religious authorities outside Singapore. Yet MUIS often frames this move not as a political consequence of state-religion tensions, but as a technological challenge posed by the internet. The internet is understood as a threat to traditional religious authority, and so MUIS turns to technological solutions, such as SEO strategies, to reassert control. The latest of these is the AI Fatwa Bot, first developed in partnership with Google and now built on OpenAI's software. This response reflects how state ideologies around technology

are regurgitated into governance, complex socio-political dynamics are recast as technical problems with technical fixes.

These technologies are cloaked in the aura of objectivity, allowing decision-makers to defer difficult religious and political judgments to seemingly neutral systems. At the same time, tools like AI are imagined as adaptable across stakeholders and scales, smoothing over the frictions between state and citizen. If successful, the Fatwa Bot promises personalised religious answers contextualised within Singapore, an ideal technological bridge between state goals and community expectations.

Yet this creates a paradox. While MUIS is charged with safeguarding Islamic authority in Singapore, and by extension, reinforcing the state's ideological coherence, it simultaneously defers religious authority to a system developed beyond its borders. Built on global data and powered by foreign technology, the Fatwa Bot effectively transfers interpretive power to an external, non-local source. This is possible, I argue, because systems like ChatGPT are perceived as neutral, objective, and therefore apolitical actors. In the chapter that follows, I challenge this perception by analysing ChatGPT as an archive.



Chapter 4

The Future Will (Not) Be Annotated

INTRODUCTION

In February of 2023, the Singaporean government installed ChatGPT into the word processing software of 90,000 of its civil servants' computers. The aim of this trial was to speed up their research and writing work that would ease the increasingly large workload placed upon civil servants. As the manager of the scheme Mr. Soh put it, "We want to free officers up for higher-level tasks. This bot can help them get over that tough first draft or speed up their work by creating sample e-mails or even speeches⁶⁰." The following May, the Ministry of Communications and Information released guidelines for civil servants using ChatGPT to try and avoid the leaking of sensitive data or misuse of copyrighted material. The guidelines came with a reminder that they took personal responsibility for the accuracy of any text produced with a generative AI (gAI) like ChatGPT⁶¹. A year after the integration of ChatGPT into government software, it was reported that the Singaporean state, via its investment company Temasek, was in talks to invest in OpenAI, the creators of gAI. As Singapore attempts to become an AI hub in Southeast Asia, it seems that the future, and the future of its government operations in general, is increasingly tied to OpenAI and its flagship software.

Going forward, therefore, it is safe to assume that all government texts will be produced by or at least with gAI software from OpenAI. As shown in the previous chapter, AI systems are already being integrated into the Fatwa processes of MUIS built on ChatGPT software. Furthermore, speculation about how ministers' speeches are written has already begun. One interlocutor told me that he had been testing ministerial speeches with AI detection software and had already found several instances where they had been created wholly or in part by ChatGPT. This raises some significant challenges. As several reports have already demonstrated, gAI frequently produces text that recreates bias and negative stereotypes (Williams 2023⁶²). Therefore, when reading government policy and pronouncements, it will be prudent to consider not only the bias and ideology of the source, but also the software they used. This consideration now also applies to texts produced by MUIS given how its processes are becoming entangled with AI technology.

60 Chia, O. (2024). Civil servants to soon use CHATGPT to help with research, speech writing, The Straits Times. Available at: Accessed: 4 April 2025.

61 Chia, O. (2023). Public officers can use CHATGPT and similar AI, but must take responsibility for their work: MCI, The Straits Times. Available at: <https://www.straitstimes.com/tech/public-officers-allowed-to-use-chatgpt-and-other-ai-but-must-take-responsibility-for-work-mci> Accessed: 4 April 2025.

62 Williams, D. (2023). Bias optimizers. American Scientist. Accessed: 4 April 2025.

This presents a particularly fraught situation for Muslims in Singapore. This is because the Muslim community finds itself in the unique position of being a minority whose religious affairs are governed and regulated by the secular Singaporean state. For example, as discussed in the prior chapter, Friday sermons read in Singaporean mosques are vetted by the state. Two of my interlocutors, in fact, had already questioned whether Friday sermons were written by ChatGPT. This creates a situation in which Singaporean Muslims must ask themselves whether their religious proceedings have been written by a system, which has been shown to frequently generate Islamophobic jokes⁶³. As I will explore, this anxiety is only amplified by the existing anti-Muslim biases in Singaporean society.

During my time in Singapore, I wanted to explore how government texts, and the imagined futures they express, have changed with the introduction of ChatGPT. However, access to civil servants and their software is obviously difficult. While discussing these problems with my interlocutor Ahmad he made an interesting suggestion. Ahmad, who teaches English literature, argued that the best response would be to treat ChatGPT-generated texts like any other text throughout history. This does not always happen, as Cearns shows, where users of LLMs often perceive them as “a rational, scientific tool” (Cearns 2024, 69) with “intelligence [that] was ‘more than’ that of any one individual” (Cearns 2024, 66). However, as I have argued, AI is fallible in the text it produces, and therefore as Ahmad argues we should consider:

“...how we analyse it, what really is its standpoint, how do we feel about this, because feelings are something that ChatGPT cannot do right...my affinity to ChatGPT has always been, I’ll see what it can produce, and I will see how different that is from what I am expected to teach my students.”

In this chapter, I attempt to follow Ahmad’s suggestion. What would happen if I presented a ChatGPT-generated text that imagined the future of the Singaporean Muslim community to Singaporean Muslims themselves and asked them to annotate it? In this chapter, I will go on to explain how we can approach ChatGPT’s database as an archive that informs the texts it produces. What could taking this perspective offer us in a critical assessment of what ChatGPT writes? To do so I explore

63 Samuel, S. (2021) AI’s Islamophobia problem, Vox. Available at: Accessed: 4 April 2025.

the archival turn and various suggestions made to approach the archive not as neutral, but as a site where power can be exerted and contested. I then outline the possible use of annotation to expose the power relations implicit in the archive. I then present a selection of annotations made by my interlocutors.

In the following three sections, I explore the consequences of the observations made in these annotations and how they explain various aspects of gAI-assisted future-making in Singapore. The section fictions and speed explores how the pressure on civil servants to work faster can cause minor issues to result in major material consequences. The section “Why can’t the hijab be modern?” shows how ChatGPT repeats some of the most common tropes about Singaporean Muslims and how that the community trapped in the past. Finally, the section “Is there going to be mass conversion of Chinese people to Islam in the future?” demonstrates how ChatGPT’s mistakes are inextricably linked to the nature of texts that gAI attempts to emulate. I conclude by exploring what these issues may mean for the imagined futures of the Singaporean Muslim community. Firstly, though, I offer a brief outline of how the systems behind ChatGPT work.

ChatGPT: An Outline

On a basic level, ChatGPT is a relatively simple system. Based on the input data, or tokens, the user enters, the system predicts the next most likely word in the sequence based on its dataset (Radford et al. 2019). An example from Daniel Dugas, a researcher in machine learning and robotics, shows that if we input the statement “not all heroes...” into ChatGPT, then it will predict the most likely words to complete the sentence would be “wear capes”⁶⁴. This is why ChatGPT is often derisively referred to as a complex autocomplete. However, from the example above, we observe that ChatGPT does not really predict single words but instead a sequence of words. Each prediction is based on two factors: the likelihood that this word would follow the preceding word and the likelihood of those words to appear in its data on specific topics. In essence, the system focuses on certain words within the input data to create a probable output. For example, the prompt I used for this project was “What does the future of the Muslim community in Singapore look like? And can you describe a scene in that future?” In generating its response, ChatGPT may home

64 Dugas, D. (2020). How Deep is the Machine?, The GPT-3 Architecture, on a Napkin. Available at: https://dugas.ch/artificial_curiosity/GPT_architecture.html#paper1. Accessed: 4 April 2025.

in on “Muslim,” “Singapore,” and “future.” As a result, when predicting the sequence of words, ChatGPT will look at the data within its corpus relating to those topics.

It is how these systems make their predictions using Artificial Neural Nets (ANN) where things become more complicated. ANN are composed of layers of nodes that mimic a simplified form of human neurons. In a simple ANN, there can be as few as three layers: an input layer, a hidden layer, and an output layer. The input layer is the data, which is available to the system, and in the case of ChatGPT that is around 300 billion words⁶⁵. The hidden layer is a set of nodes which “allows the model to describe and predict complex relationships within the data” (Joque 2022, 46). It is in this hidden layer where the prediction happens. To take an example from Joque: if an ANN were being used to predict Pop-Tart sales after a hurricane, “one of the...neurons could be on the lookout for hurricanes so devastating that inhabitants leave town rather than stock up on food. We would want that neuron to detect when all three inputs...are very high and then suggest to the output neuron to decrease the predicted pop-tart sales” (Joque 2022, 47). As Joque points out, this is a simplification, and it is unlikely that a node would be looking for something so straightforward. In fact, this layer is referred to as hidden because there is little understanding of exactly what happens in this step. Instead, ANN are usually trained on questions with known answers, with the weighting of the hidden layer tweaked until it arrives at the correct outcomes. For example, the Pop-Tart ANN would be trained on historic data of Pop-Tart sales after a hurricane. This model is then applied to questions with unknown answers; this is known as supervised learning. ChatGPT also makes use of unsupervised learning, where there is no target answer, but the model is free to make any associations (Radford et al. 2019).

To grossly simplify, ChatGPT takes the input data from the user and subsequently focuses on a few key terms within that text to narrow its corpus of data. The ANN then makes complex predictions about the most likely sequence of words to appear in response to the user’s prompt. This sequence is then delivered to the user. This is problematic for a number of reasons, perhaps the most well-known of which is the tendency for this system to ‘hallucinate.’ Hallucination refers to situations where ChatGPT generates seemingly plausible text that is false. This happens as a result of the system generating probable sequences rather than factual

65 Hughes, Alex. 2023. ChatGPT: Everything you need to know about OpenAI's GPT-4 tool. BBC. . Accessed: 26 January 2026.

sequences. For example, when generating anthropology citations, ChatGPT may see that the most common name is Smith, and the most common year of publication is 2012. It would therefore produce a citation like “(Smith 2012)” despite these citations either not existing or not relating to the topic of a text. Emsley (2023) found several such hallucinations when asking ChatGPT to help generate a scientific paper. Whilst these are referred to as hallucinations and are benignly treated as glitches, they in fact reveal what ChatGPT is designed to do. Such citations have the correct form of citations, but they do not have the correct content or understanding of what citations are. As a result, what ChatGPT produces are simulacra of texts that are often correct in form but not content. ChatGPT is referencing everything and nothing at the same time. How might we engage with such texts? One approach could be to conceptualise ChatGPT as an archive and assume the critical methodologies used by archivists and historians.

ChatGPT as Archive

When OpenAI built GPT-3, they needed a mountain of data to do it. The system needed billions of example words and sentences in order to replicate human text. To be precise, the training dataset for GPT-3 had 499 billion tokens, roughly equivalent to 374 billion words. Sixty percent of those words came from an open-source database called Common Crawl, the data of which are collected by crawling webpages and scraping their content. However, OpenAI did not use this data raw; rather, it was filtered. In their explanatory paper on training ChatGPT, they explain that all the data from common crawl were evaluated for similarity to what they called “high quality reference corpora” (OpenAI 2020, 8). Most of these reference texts were drawn from English-language Wikipedia. In this paper, the process of constructing this dataset is presented as a neutral step in the larger process of building a Large Language Model (LLM).

I would argue that this process of assembling a training corpus is akin to archiving. As Carter states, the currency of the archive is “texts in the broadest sense of the term, including written, visual, audio visual and electronic” (Carter 2006, 216). Likewise, the authority of LLMs resides in the huge corpus of texts their algorithms replicate toward the production of objective policy. At one time the process of archiving was also seen as a neutral collection of texts. The archive was presented as a suppository of historical documents without political or power relations. Similarly, the database of ChatGPT is treated as a neutral collection of texts.

However, just as the texts within the colonial archive were procured via looting, LLM databases are produced via an analogous process of theft. For example, several AI companies are currently being sued for violation of copyright. This is not the only way in which LLMs and colonial archives are similar. As Arondekar writes about British India, “colonial governance was accomplished primarily through a practice of archiving, a systematic circulation, preservation, and recall of writing texts that allowed rule by remote control from London” (Arondekar 2009, 13). Archives under colonialism were a tool for knowing the other in order to govern them at a distance. As I have already argued in Chapter 2, AI and the Smart Nation within the Singaporean state operate similarly. LLMs and the colonial archive, then, are not just analogous of one another in that they share an epistemology. What might be gained, therefore, from viewing ChatGPT database as a kind of archive⁶⁶?

Since the archival turn, in which the role of archives was reassessed, the archive has ceased to be a neutral site of knowledge. As many historians, archivists, and anthropologists have reflected, the archive holds power in its ability to include and exclude. As Schwartz and Cook (2002) argue, the archive is a tool by which the powerful are able to enshrine certain narratives as ‘truth.’ As Foucault put it “The archive is first the law of what can be said, the system which governs the appearance of statements as unique events” (Foucault 1972, 129). For example, Stoler (2009) shows how by archiving colonial records, the uncertain social categories produced by colonial administrators became the rigid logics of empire. Once something enters the archive, it gains an aura of truth. In this way, inclusion is a way in which power is asserted in and through the archive.

Similarly, what is included in ChatGPT archive has a powerful impact on what this system produces. For example, as the OpenAI paper shows, “words such as violent, terrorism and terrorist co-occurred at a greater rate with Islam” (Brown et al., 2020, 38). This is likely a result of those words co-occurring with “Islam” at a high rate in the ChatGPT archive. This is significant because like how the archive gives text the aura of truth, text produced by AI systems is given an aura of objectivity. Joque (2022) calls this process, in which technology confers legitimacy, objectification. By using a machine, the subjective ideas of a text are made objects by being “carved into the material world” (Joque 2022, 82). In other words, because a machine produced a text, it is seen as more neutral or

66 There are some articles on using AI in archives (Jaillant, Mitchell, Ewoh-Opu and Urbaneja 2025), but nothing I could find discussed how AI can be viewed itself as a kind of archive.

objective. Further, just as the colonial archive informed imperial rule, we have seen how text generated from the ChatGPT archive is informing government policy.

However, the archive also has power through exclusion. As Carter (2004) points out, by excluding texts written by marginalised groups they can be silenced in the historical record. We could ask similarly pointed questions about what is included in the ChatGPT archive. Why is it that English-language Wikipedia is the mark of a quality text, and who is excluded when this is the filter? What other texts and perspectives exist offline that are not included in ChatGPT? In other words: what is excluded from the ChatGPT archive? The task Carter (2004) points out is in identifying these silences before these groups are completely forgotten from the archival record. How can such absences be identified? Carter argues that even when a group is entirely expunged from the archive, their absence can be felt in the silences left behind. Schwartz and Cook propose we do this by reading against the grain “to bring out voices which speak in opposition to power, or that insert irony or sarcasm or doubt” (Schwartz and Cook 2002, 15). In this way, they encourage the archive to be approached by seeking out traces of absence left behind.

How can we read against the grain of ChatGPT? It is not possible to access the database because this is proprietary material. Even if there were access to the database, it would be a huge task to explore what it contains. If someone had access, there could be a compelling ethnography of data scientists within OpenAI seen through the analytical lens of the archive. Such a project could explore the professional practices and assumptions of data scientists at OpenAI⁶⁷, as Schwartz and Cook (2002) suggest should happen with archivists. However, I did not have access to the database, or to OpenAI engineers. Instead, I attempted to read against the grain of the archive by inviting my interlocutors to annotate ChatGPT text. However, whilst such readings are usually argued to expose silences, and absences within the archive, I agree with Arondekar that implicit in such approaches “is the abiding assumptions that the archive...still constitutes *the* source of knowledge” (Arondekar 2009, 6). Subsequently, I take up Arondekar’s suggestion to view the archive as a system that produces fictions, which have been treated like facts. To do

67 This is, in fact, something that Nick Seaver (2022) proposes in his article on data-ethnography and in his book *Computing Taste* in which he spent time with programmers at Spotify to understand their approach to data. However, he does not approach these works through the analytical frame of the archive.

so, I ask my participants to annotate ChatGPT generated text in order to demonstrate the fictions AI systems produce.

Annotation is by all definitions a move by readers to engage with a text, whether that be marking it to remember (Jackson 2001), to correct the original text, (Orgel 2015) or to transmit information to other readers (Scott Warren 2010). Regardless of the annotator's intentions, all these acts serve to decentre the assumed authority of the printed word, instead drawing attention to the margins. Consequently, annotation has been used as a way of reading against the grain of the archive. For example, the artist Alexandra Bell (2018) has used annotation to correct *New York Times* articles about the murder of Michael Brown by police. By annotating these texts, Bell undermines the aura of objectivity which newspapers like the *New York Times* project, (Chai 2021) and exposes the history of racist texts, speaking to a kind of archive that implicitly informs the writing presented in the *New York Times*. By offering discursive space, annotations create an opportunity for people to speak back to archives and address their silences.

Just as the archival turn challenged the notion that archives are a source of objective truths, I hope that this chapter can demonstrate how ChatGPT, viewed through the lens of the archive, can be seen as reproducing power. This, I hope, will open a conversation about how to use ChatGPT more critically in the same way that many still use archives with a critical approach.

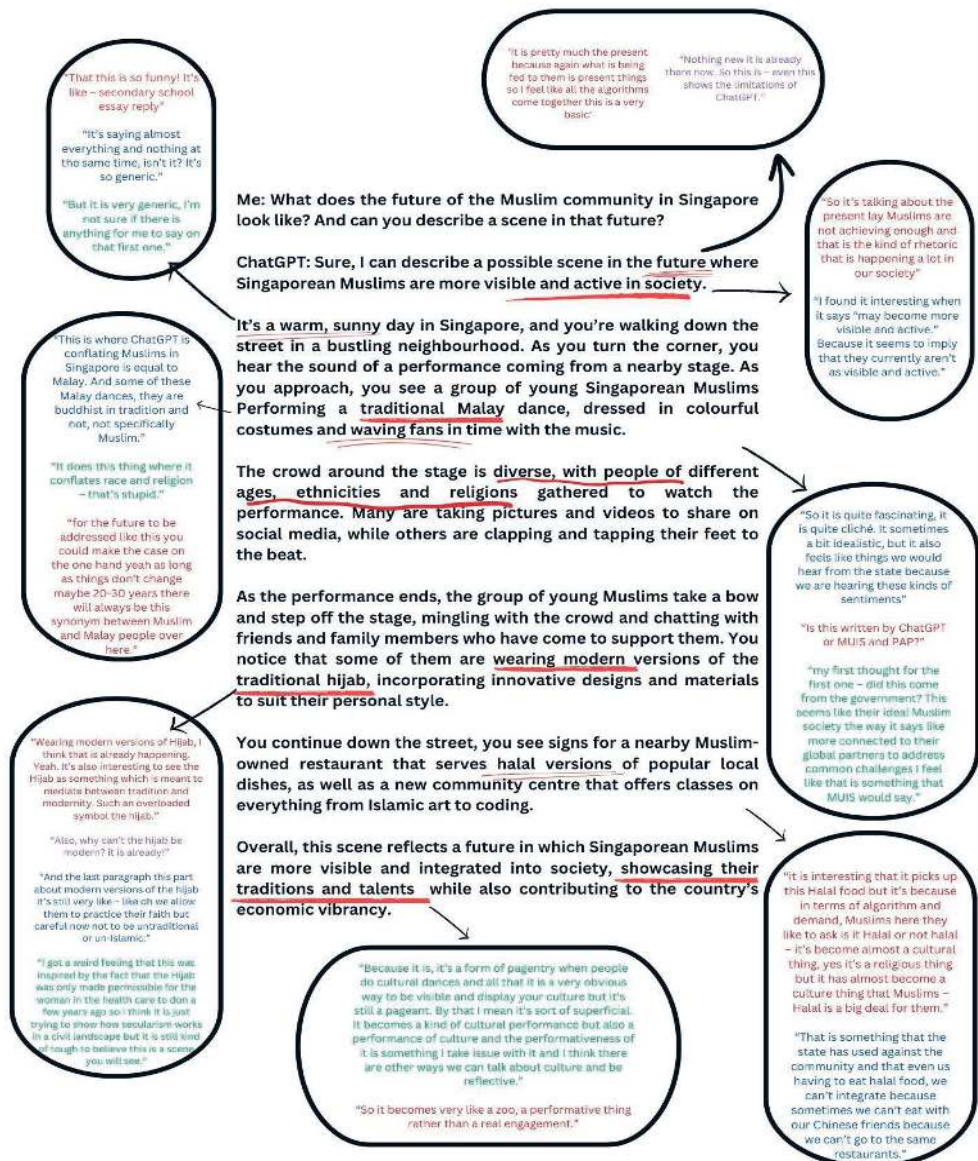
To this end, I prompted ChatGPT to predict the future of the Muslim community in Singapore. I then took this text with me to each of my interviews in Singapore and asked my interlocutors to annotate the text, showing the fictions that ChatGPT produces based on existing biases within its archive. These annotations open up the possibility to access the ChatGPT archive and understand the underlying assumptions embedded within its systems and sources. Further, by moving into this discursive space, my interlocutors are enabled to say, "we are here." Both these acts help to challenge the objectivity and finality of ChatGPT's pronouncements. As with archives before them, ChatGPT elevates itself beyond discourse by using technology to appear objective. As with archives, annotation can pull these gAI texts back into discussions about power. The annotations that follow aim to allow that discourse to occur so that Singaporean Muslims can correct mistakes in ChatGPT's record.

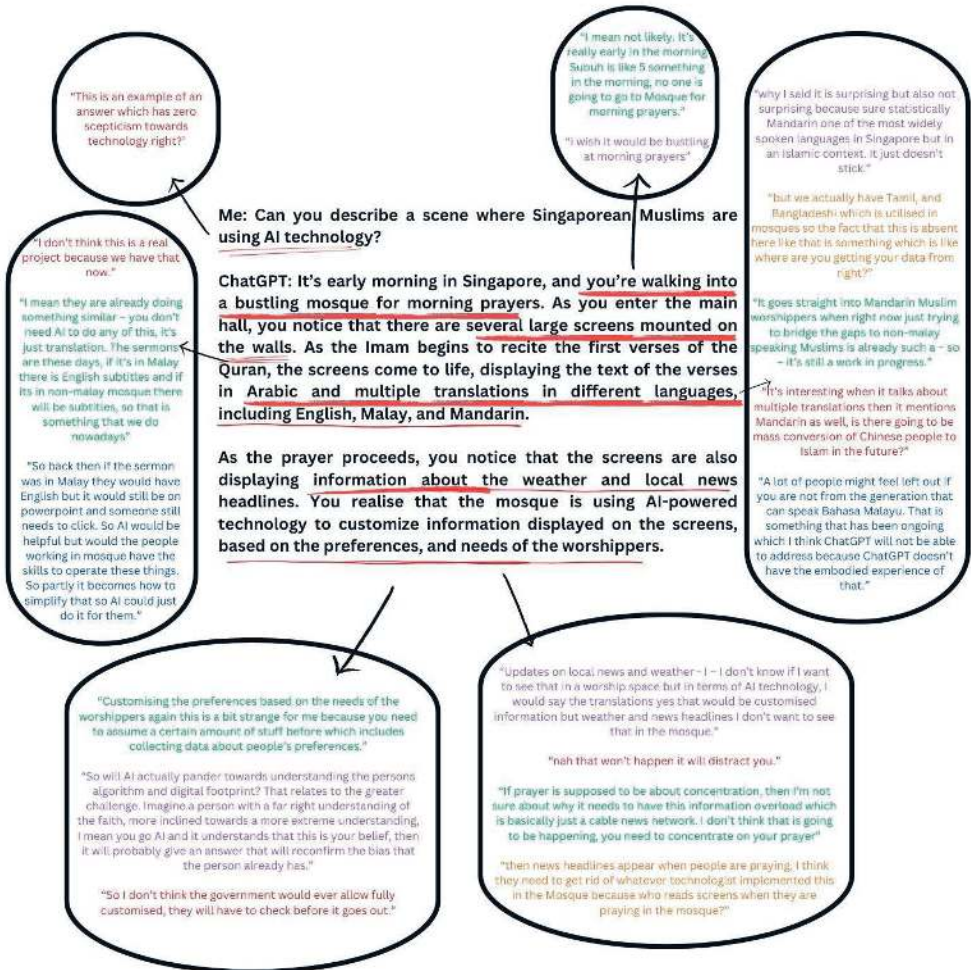
Further it presents them both as subject to the future ChatGPT imagines for them, as well as actors in the present and future.

During my fieldwork interviews, I would invite my interlocutors to read the ChatGPT-generated text, which is presented below. I prompted ChatGPT to imagine the future of the Muslim community in Singapore. Originally, I had planned to run a workshop for people to annotate and discuss the text together. However, due to various administrative reasons this was not possible⁶⁸. Instead, the annotation was done individually, and the annotations were later compiled into one text by me. Those annotating were from a mixture of backgrounds. Ten were Ustaz who worked with MUIS on a voluntary basis. Another ten were writers, activists, and artists. Five worked in the tech industry in various capacities. Finally, three university students annotated the text. In total, twenty-eight people read and annotated the text. I could not include all the comments here, but I tried to include comments which were representative of the sentiments shared.

The version of ChatGPT I used in March 2022 was 3.5. As of writing this chapter, the commercial and licensed model has since been updated with access to more data. Further, I prompted these responses at a time when there was little to no conversation around prompt engineering. This certainty limited the system's ability to produce the best possible results. However, for reasons I will return to, I believe these limitations do not prevent this exercise from giving us a glimpse into the AI archive.

⁶⁸ This being said, I would like to repeat this experiment with the latest version of ChatGPT and in a workshop setting in order to gain greater insights and develop the methodology further.





"I Mean Not Likely": Fictions and Speed

What do these annotations teach us about ChatGPT's archive? Perhaps most obvious to those familiar with Singapore, or Islam, are the small fictions. Throughout the text there are ideas that demonstrate this version of ChatGPT's misunderstanding of Islam and the Singapore context. These issues vary in seriousness. For example, one could argue that its claim of a "bustling mosque for Morning prayers" is an attempt to be literary. In reality, mosques are rarely 'bustling' for morning prayer because Fajr, the first prayer of the day, is usually around 5:30am. Consequently, it is far more likely that people perform these prayers at home. The response from my interlocutors was unsurprisingly light-hearted, with one saying, "I mean not likely," and an Ustaz telling me that he wished for such attendance at morning prayers. However, in this section

I aim to show how these seemingly minor mistakes can have a significant impact in the governance context of Singapore, where ChatGPT is increasingly becoming integrated.

Singaporean Muslims find themselves in a unique position. Singapore has an accommodative secular constitution (Article 15: 1; 4) and a majority non-Muslim Chinese population. However, since 1966 all Muslim affairs in Singapore have been managed under the Administration of Muslim Law Act (AMLA) (Motalib 2008, 51). As previously discussed, the introduction of this law has centralised Islamic governance within the Singaporean state (Abdullah 2021, 20). As we already explored, the centralisation of Islamic religious governance allows the state to exert what Müller (2018) calls classificatory power in which the limits of Islamic identity are defined by state policy.

It is in this context that ChatGPT's 'errors' in this text become significant. In the section of the generated text where ChatGPT imagines a future where the Singaporean Muslim community uses AI technology, it reads: "You realise that the mosque is using AI-powered technology to customize information displayed on the screens, based on the preferences and needs of the worshippers." On the surface, my annotators, who are practicing Muslims, or themselves Ustaz, mocked this as a silly mistake like the bustling mosque, with one saying, "they need to get rid of whatever technologist implemented this in the Mosque." This annotator went on to explain that having screens within the mosque showing news did not make sense because this would distract worshippers from prayer.

However, several of my interlocutors disputed this on the grounds that the government would never allow such decentralisation. As one put it, "They would have to check it before it goes out." Indeed, this seems like an unlikely future, given that all sermons are checked and controlled by the government. As we have already explored, MUIS has, since 2003, introduced the Singapore Muslim Identity (SMI). The SMI comprises of ideals each Singaporean Muslim should embody in their practice. To try and encourage the SMI, MUIS employees told me that they use search engine optimisation practices to ensure Singaporean Muslims see MUIS rulings, in line with SMI, first when the latter google religious questions. Therefore, without tight government control, the personalised mosque screen technology ChatGPT describes is highly unlikely. This "error" represents the biases of ChatGPT's archive in two ways. First, the suggestion of TV

screens in the mosque suggests⁶⁹ that ChatGPT 3.5 does not have a large corpus on everyday Islamic religiosity, because if it did, it would perhaps notice that believers try to avoid distraction during prayer. Second, we can see that ChatGPT 3.5's archive does not have much information on a Singaporean context where religious messaging is tightly controlled; otherwise, it would not suggest personalised AI-generated messages. That context is important for Muslims in Singapore. After reviewing the ChatGPT-generated text for a while, one religious educator I met summed up his issue with it like this:

"If someone asks [AI] about celebrating⁷⁰ Christmas [as a Muslim], I think the answer would be you can't do it. But this is an issue that has a variety of opinions. By giving this one opinion can lead someone to think, 'This is the only opinion.' And if I'm asking this question...and the platform tells me I can't celebrate Christmas, it's hard for me to live in a multicultural society in Singapore."

This may seem like a strange example to give, but it refers to a specific well-known incident in Singapore. In 2015, the Zimbabwean preacher Mufti Menk was invited to speak in Singapore (Abdullah 2017). He was denied his permit on the grounds that he advised Muslims not to wish Christians "Merry Christmas." Opinions on this issue are divided (Abdullah 2021), and the previous Mufti of MUIS Sheikh Syed Isa Semait even wrote a Fatwa which aligns with Menk's opinion in the 1980s (Hassan and Bahari 2019⁷¹). However, the government stepped in during the Menk incident to emphasise that wishing others a Merry Christmas was imperative in order to uphold racial harmony in Singapore. Anything else would be seen as sowing the "seeds of terrorism and intolerance" (Ab Razak 2019, 423). This incident serves to show just how important context is in Singapore, where seemingly minor mistakes like advising against saying Merry Christmas can lead to significant consequences and even accusations of extremism.

69 I use this tentative language on purpose because we will never know for certain what is contained within the datasets of large language models. These annotations serve as an attempt to read against the grain of the ChatGPT archive in order to imagine what might be contained within its dataset.

70 Here my interlocutor mentions 'celebrating' Christmas. By this I interpret them to be referring to the issue of wishing others a merry Christmas and not literally to celebrate it as a religious holiday.

71 Hassan, M.H. and Bahari, M.B. 2019. A balance approach to the issue of 'merry Christmas' greeting by Muslims, Pergas Blog. Available at: . Accessed: 8 April 2025.

However, surely, if these errors can be spotted in quick annotations, then they will be easily detected and have limited impact. Further, whilst my interlocutors were all practicing Muslims, many with advanced degrees in theology, those operating the AI Fatwa bot described in the previous chapter will also have these qualifications. However, it is not only within MUIS that the Singaporean state makes decisions about the Muslim community. In some cases, it is less likely that Muslims will be in the room to correct the record. As one interlocutor pointed out to me, in their job at a large tech company, they often found themselves being the only Muslim in the room during policy conversations. They told me that being in these rooms is important because:

“Having that voice of Muslims [is important] because we sit in teams with so many languages and religions. You can’t expect everyone to know, but [they] also have their own biases. So, there have been instances where I do get questions like ‘is this normal?’”

Without Muslims in the room, or any other minority for that matter, it is easier to potentially misunderstand Muslim life. Given the integration of ChatGPT into everyday civil service operations, one annotator was even more cynical, arguing that ChatGPT would replace representation by being consulted in the way community leaders once were. Regardless, without fact checking, ChatGPT can propagate falsehoods which have tangible consequences.

Even with the proper representation, there is one trend that comes with all technology, ChatGPT included, which cannot be addressed: speed. The sociologist Hartmut Rosa argues that society is perpetually speeding up, a result of the need for “growth, innovation, and acceleration for its structural reproduction and to maintain its socioeconomic and institutional status quo” (Rosa 2016, 31–32). Technology, he argues, facilitates this speeding up in ways we all experience. For example, I am sure we have all felt the pressure to respond to email 24/7 because our devices make that possible. Likewise, ChatGPT offers “instant answers⁷²” (OpenAI 2022) that often sound plausible, and Singaporean civil servants are encouraged to speed up their research and policy writing by using the software. As a result, ChatGPT will facilitate the speed up of policy writing, which may in fact increase pressure on civil servants. As one of my interlocutors and a political scientist argued, “Knowing how civil

72 Open AI (2024) ChatGPT OpenAI.com. . Accessed: 8 March 2024.

servants are swamped with work...They may try to find shortcuts, and so I find this worrying.”

This worry is shared by Human-Computer Interactions scholars who argue that the most effective way to tackle online misinformation is to consciously slow down (Wilner et al. 2023; Fazio 2020; Salovich and Rapp 2021). ChatGPT used to offer a warning below its generated texts that read, “ChatGPT can make mistakes. Consider checking important information” (OpenAI 2023). However, as of 2025, this warning has been removed and replaced with a link to their terms of service in which they warn, “Given the probabilistic nature of machine learning, use of our Services may in some situations result in Output that does not accurately reflect real people, places, or facts⁷³.” These warnings are buried in the terms of service, so it seems unlikely that civil servants using ChatGPT will heed them when other societal pressures discourage slowing down and while these systems were introduced to enable an increase in speed. As a result, ChatGPT’s mistakes about the basics of Islamic faith and religious practice are bound to end up appearing in government documents, policies, and laws. Of course, the replication of racial biases within government documents is nothing new. It is just as likely that a civil servant in the Singaporean government does not know how busy the mosque is for Fajr prayers. What is different, however, is the way in which these errors can pass by undetected as government work becomes increasingly automated.

Further, these are not just innocuous mistakes about when people are likely to be praying in the mosque. They are also fundamental misunderstandings of how Islam is governed in Singapore, and the context which plays a central role in how that governance is managed. These ‘mistakes’ coupled with the pressure to speed up mean that ChatGPT’s unreliability stands to cause tangible negative outcomes for the Muslim community, given how entangled Singapore’s governance structures have become with OpenAI and its generative AI products.

“Why Can’t the Hijab Be Modern?”

In addition to the factual mistakes within ChatGPT’s text, there are also several instances in which it perpetuates negative stereotypes about the Muslim community. Chief among these is the repeated conflation of Muslim religious identity and Malay ethnicity. To quote one annotator,

73 Open AI (2024) *Terms of Use* OpenAI.com. Accessed: 8 April 2025.

“It does this thing where it conflates race and religion – that’s stupid.” Where my prompt requested a scene depicting the future of the Muslim community in Singapore, ChatGPT’s text describes the performance of a Malay dance. This is problematic for two interconnected reasons. Firstly, this constant conflation of Malay-ness and Islam excludes large segments of the Muslim community, such as the Indian Muslim community who constituted around 69,000 people as of 2021 (Census, X 2021⁷⁴). Secondly, the denial of non-Malay Muslims’ existence expunges the unique concerns of these communities. This is especially egregious in the context of Singapore, where race and religion are central to navigating citizenship (Tschacher 2018, 17). This conflation results in the flattening of Muslim concerns while prioritising those of the Malay community. At best this represents a failure to understand the complexity of the community, and at worst it renders segments of the community invisible.

This flattening of Muslim identity appears in the way ChatGPT handles two topics: halal food and the hijab. In ChatGPT’s constructed scene, we find restaurants serving “halal versions of popular local dishes” and women “wearing modern versions of traditional hijab.” As annotators pointed out, halal food and the hijab have frequently been used as examples by the state as Muslim failure to integrate into Singapore. It has often been argued that Muslims are unwilling to eat with non-Muslims because of halal food (Musalib 2012). Similarly, the hijab has become a visual symbol of the Muslim communities perceived failure to integrate (Abdullah 2016). As the former prime minister Lee Kuan Yew argued in 2011, “I would say, today, we can integrate all religions and races except Islam” (Rahim 2012, 170).

By tying it to religious prescriptions, the ‘failure’ of the community to integrate is made into an intractable issue. Not only is the Muslim community not currently integrated, but also it does not have a route toward integration. As scholars like Barr (2013) argue, a vicious cycle begins where a perceived failure to integrate denies access to resources for the Muslim community. As a result, the Muslim community will “always be kept separate by various systemic programmes concerning language, public culture, education, and outright discrimination” (Barr 2013, 113). By suggesting that Singaporean Muslims have failed to integrate properly, ChatGPT’s text maintains the myth that Islamic faith prevents proper engagement in modern society.

74 SingStat (2020) Singapore census of population 2020, KEY INDICATORS OF RESIDENT POPULATION. Available at: . Accessed: 8 April 2025.

We can see this dominant narrative in ChatGPT's text about the future of Muslims in Singapore. Throughout the text, ChatGPT emphasises a positive, harmonious future in Singapore. However, this future is not achieved by addressing racial inequalities which impact the Muslim community but by Muslims becoming "more visible and integrated into society" (MUIS 2006). As one of my interlocutors commented, "It feels like it is very nicely painted, so I am very curious if you feed them more about the different nuances of the Muslims in Singapore, would they be [so nicely painted]?" By "nicely painted" here, they are not referring to the style but to the overwhelming positivity of the ChatGPT-generated text that neglects the material challenges faced by the Muslim community in Singapore. Following the official state line, ChatGPT regurgitates the idea that racial harmony is already achieved in Singapore and can only be undermined by the failure of Muslims to correctly integrate.

The conception that the Muslim community does not integrate well has its roots in the history of Singapore and the region more generally. Given the presence of Singapore's much larger Muslim-majority neighbours, Malaysia and Indonesia, there has long been anxiety about the loyalty of Singaporean Muslims. This anxiety is tied to the shared ethnic identity between the majority of Singaporean Muslims, 80% of whom are Malay, and Malaysian Muslims. As we have seen, the Muslim community in Singapore is perceived as a dangerous element that could cause a return to pre-independence racial violence. In this context, certain behaviours, such as wearing the hijab or not eating with non-Muslims because of concerns about halal, sow the seeds of division and are routes to violence. It is this suspicion that drives the pressure for Muslims to integrate as modern Singaporeans and simultaneously denies that integration.

However, as one annotator pointed out "why can't the hijab be modern? It already is!" It is a running joke that Singapore remains two to ten years from completion. The 'future' city is just out of reach. As Collins (2008) has argued about consumerist societies, the future is the products you do not own yet, and there is always a new product. As a result, we remain in a kind of perpetual present. This is true for Singapore, which is frequently on the move in search of the future. Likewise, Muslims in Singapore find themselves trapped in the present. The future, as presented by the state and ChatGPT, is one where Muslims are "more visible and integrated into society" (MUIS 2006) However, this future remains just out of reach because of the association between their religious identity and histories of racial discord in Singapore.

Therefore, there is no hijab sufficiently modern that can overcome the idea that the hijab represents a failure to integrate. As I have already shown, Bear (2016) calls these narratives epistemes of future in which apocalyptic futures are anticipated and against which states guard themselves. This focus on anticipating disaster creates a “continually receding horizon of the future [that] determines our actions in the present” (Bear 2016, 493). In Singapore, the apocalyptic future is one in which the delicate balance of racial harmony fails, leading to violence between races. Here the past, present, and future are collapsing into one moment, freezing the Muslim community in what Bear calls a “foreclosed future” (Bear 2016, 496) as described elsewhere in this thesis.

These tired tropes, and their debunking, go back to the time of Singaporean independence if not earlier. There are many articles covering all of the issues described in this chapter in much greater depth⁷⁵. The question, therefore, is what role ChatGPT plays in continuing to reproduce these negative stereotypes. As we have explored, ChatGPT fundamentally works on the basis of statistical probability. Based on its dataset, it produces text that reflects the most likely response to a prompt. This suggests that while many thousands of words have been spent debunking the stereotypes about Singaporean Muslims, much more data exists within ChatGPT’s dataset that confirms them. What matters most to ChatGPT is what things are most common rather than what is most accurate. Observing this led one annotator to refer to what ChatGPT does as regurgitation saying,

“I’m not sure there is anything for me to say about it. Largely because it is a very generic statement which is being made, and again, I am not even sure what kind of data is being fed in order to churn out these responses.... It’s about more than a thing being able to churn out or regurgitate⁷⁶ the things it has read—it needs to be able to read through and interpret, refer, and most importantly debate.”

ChatGPT can only make text that replicates and recombines its archive; therefore, it can only represent the present. This led to the most frequent annotation—that the future being presented already exists. As a result,

75 Namely, Abdullah 2016, 2017, 2021, Alatas 1977, Chua 1995, 2003, Febrica 2010, Ganapathy and Fee 2016, Müller 2018, Mutalib 2008, Noor 2011, Rahim 2012, Rahim 2020, Rashid 2016, Seng 2009, Tan 2016, Zainal and Wong 2017, to name just a few.

76 It is from this quote that I draw the inspiration for my thesis subtitle, *AI Regurgitation*.

ChatGPT is bound to replicate the foreclosed futures Bear describes, in which Muslims are never quite modern or integrated enough.

“Is There Going to be Mass Conversion of Chinese People to Islam in the Future?": Foundational Issues

So far, most of the critique I have presented of this ChatGPT-generated text could be dismissed on technical grounds. The version of ChatGPT I used was 3.5 from March 2022, the commercial and licensed model has since been updated with access to more data. Further, I prompted these responses at a time when there was little to no conversation around prompt engineering. Certainly, prompt engineering, where the user refines their question to improve ChatGPT outputs, could have increased the quality of the generated text. The argument goes that improving the technology and the skill of the user will address any and all of the issues raised by the annotations I have presented.

However, there is research to suggest that increasing amounts of data and ChatGPT updates have not improved the quality of its generated text. One paper found that, in fact, ChatGPT performance on certain tasks had worsened over time (Chen, Zaharia and Zou 2023). The *MIT Technology Review* has reported since late 2022 that OpenAI may be running out of quality data to train their model on (Xu 2022). Furthermore, there is evidence that using AI generated text to plug the gap left by man-made text, may lead to model collapse⁷⁷ (Shumailov et al. 2023). Most damning for the argument that systems like ChatGPT will inevitably improve is a study from researchers at Radboud University, which shows that AGI (Artificial General Intelligence), OpenAI's stated aim, is computationally intractable (van Rooij et al. 2023). This means that the quantity of data and computational power required to achieve “sentience” through systems like ChatGPT are unachievable. These articles taken together suggest that we are nearing the ceiling of what LLMs such as ChatGPT can achieve. However, in this section I want to argue that ChatGPT texts have more foundational issues when it comes to generating novel text, which cannot be addressed by technical improvements.

77 Model collapse as described by Shumailov et al (2023) is where LLMs slowly degrade over time because the data input is not high quality. Over time, bad data erodes the ability of the LLM to write convincing human text. Eventually, this would theoretically lead LLMs to produce nonsense sentences with no grammatical or lexical logic. This is particularly interesting in my case because Shumailov et al (2023). show that model collapse appears first in minority data sets on topics which have little or no data within the ChatGPT archive. Consequently, LLMs tend to produce hallucinations and mistakes first about minority groups, like Muslims in Singapore, which are less often noticed because the model as a whole appears to be performing well.

Whenever someone writes a text or creates an archive, they make choices about which information to include and exclude. There is no text which is exhaustive, and what appears in a text is always a choice. This becomes an issue with generative AI text because readers do not have access to the reasoning used by ChatGPT when making these choices. As Salvaggio aptly puts it, generative AI outputs “are infographics that don’t tell us how to read them...imagine a map that doesn’t have North, South, East and West. We have to work this out by looking for certain landmarks that we do understand⁷⁸” (Salvaggio 2023). ChatGPT-generated texts are representations of the dataset they are built upon, which is in turn is an incomplete sample of the real world. This is another way in which ChatGPT is similar to archives, which Verne Harris has argued, “is best understood as a sliver of a sliver of a sliver of a window into process” (Harris 2002, 84). In the annotations of ChatGPT presented here, then, we are searching for landmarks that might give us a window on to this sliver of a sliver of a process.

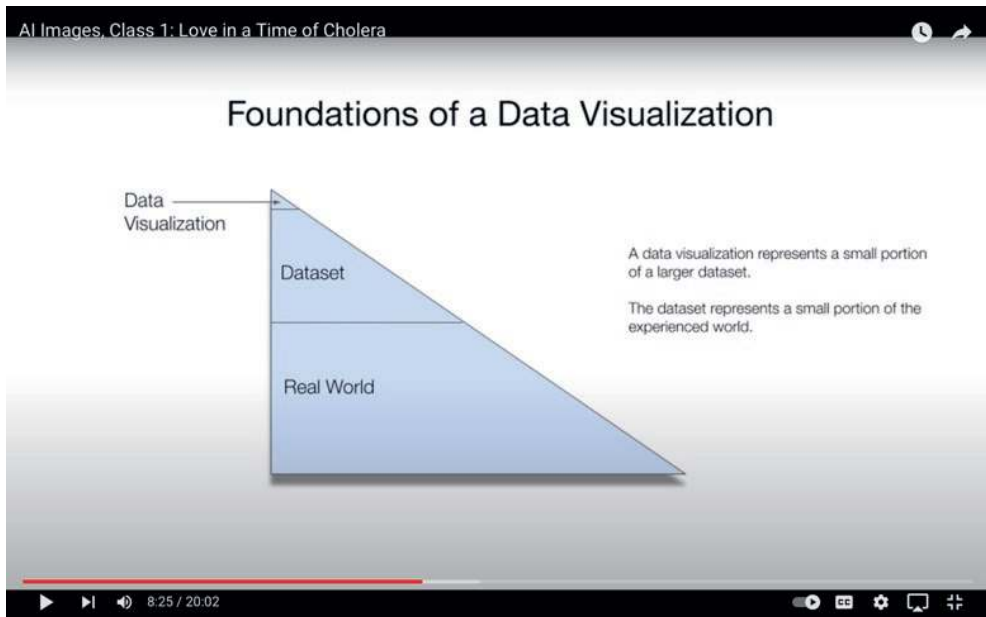


Figure 10–The AI database iceberg

One landmark that may help us understand the choices ChatGPT made in this generated text are the three languages it mentions being translated in the mosque, namely Malay, Mandarin, and English. As one of my in-

⁷⁸ Salvaggio, Eryk. 2024. AI Images, Class 1: Love in a Time of Cholera. YouTube. . Accessed: 26 January 2026.

terlocutors pointed out, “Sure, statistically, Mandarin is one of the most widely spoken languages in Singapore, but in an Islamic context, it just doesn’t stick.” Another jokingly said, “is there going to be mass conversion of Chinese people to Islam in the future?” Both are right to point out that it is highly unlikely that mosques would choose to translate to Mandarin, a language hardly spoken by the Singaporean Muslim community. However, if you google what the most widely spoken languages in Singapore are, you will find the answer: English, Mandarin, Malay, and Tamil. This suggests that ChatGPT chooses to present the most dominant or common narratives in its texts. This is further supported by the regurgitated stereotypes we already discussed. Due north for ChatGPT, then, means representing the majority.

What the North Star of the Mandarin translation in the mosque demonstrates is what our understanding of how ChatGPT already suggests. As the AI research group Estampa argue, “generative AI tools disassemble language (visual, textual) and reassemble it based on the calculation of probabilities” (Estampa 2024). What matters to ChatGPT, then, is not what is true but what is most likely. Striphas refers to this as algorithmic culture, meaning “the use of computational processes to sort, classify and hierarchise people, places, objects and ideas” (Striphas 2015). This results in the exclusion of minority perspectives because they are not well represented ChatGPT’s outputs. Even without a detailed understanding of the inner workings of ChatGPT, annotators point to several of these instances within this short text, including the exclusion of Indian Muslims whose language translation needs are not mentioned. This preference towards the most probable also has the interesting side effect of producing predictable and clichéd writing. This is something that is frequently commented on by annotators who derided the writing quality. The result is boring writing that fails to represent complex realities.

Of course, it does not need to be the case that big data sets exclude minority perspectives. As Foucault-Welles (2014) argues, large data sets can make otherwise difficult to access minorities visible. For example, she points to her research about women over fifty who have played online games for over 1000 hours. From an original dataset of fifteen million users, Foucault Welles was able to identify one thousand five hundred users who matched her research criteria, a group who usually “get lost in Big Data analytics, wiped away as noise among the statistically average masses” (Foucault Welles 2014, 2). However, as I have shown in previous chapters, and as the annotations of my interlocutors attest, this is not

the approach taken by LLMs like ChatGPT⁷⁹. These systems tend towards a conception of truth in which bigger is better (boyd and Crawford 2012). The consequence is that, in general, big data averages that exclude outliers are the norm in AI projects like ChatGPT.

There are already examples of this preference for bigger datasets in the form of Google Translate. In 2016, Google announced that it would begin using machine learning to improve the quality of its translations (King 2019). This change entailed a shift towards the kind of technology which underlies ChatGPT, in which the system would scan its corpus for the most probable translation of a passage. While this change improved the quality of translation in general, it led to some interesting mistakes in translation of literary texts and figurative writing. As Large (2017) observed when translating *Hamlet*'s "To be or not to be" monologue to German, Google Translate mistakenly turns the word "fortune" into the financial sense rather than fate. He concludes this is a result of Google Translate's corpus preferencing business and political texts. Critics argue that this change would lead to the erasure of more idiosyncratic language and idioms, which are not well represented within text, reducing the chances of surprising novel choices.

However, as King (2019) points out, Google aimed to guard against this outcome by encouraging users to submit alterations and annotations. The algorithm would make the translations broadly statistically accurate while human users return the specific and distinctive. A similar system could be introduced to ChatGPT through text annotation by users. It would be easy to dismiss this as idealistic; however, we have seen how "participatory web cultures" (Beer 2009) in projects like Wikipedia have found success. A somewhat similar process occurs with ChatGPT wherein

79 Further, increased visibility can be a double-edged sword. As Foucault Wells argues, the historic lack of data about women and minority groups has resulted in them being "problematically written into the margins of social science, discussed only in terms of their differences, or else excluded altogether" (Foucault Wells 2014, 2). For example, as D'Ignazio and Klein (2020) show, up until 2014 no one was tracking data on the mortality rate of black women during childbirth in America. This is in spite of several civil society groups campaigning about black maternal health for decades. However, increased diversity within datasets often leads to "more often than not...enlisted in the service of increased oppression, greater surveillance, and targeted violence" (D'Ignazio and Klein 2020, 14). For example, the Chinese startup CloudWalk aimed to produce a facial recognition dataset that did not exclude the faces of people of African descent. To do so, they signed a deal with the Zimbabwean government to provide facial scans, and in return the Government of Zimbabwe received "a national facial database and 'smart' surveillance infrastructure" (D'Ignazio and Klein 2020, 13). This presents an infrastructure which can then be used by the government to track citizens, a government which D'Ignazio and Klein note has a "dismal record of human rights" (D'Ignazio and Klein 2020, 13). Being more visible can also result in further repression, a fact which I return to in chapter 5 of this thesis.

user data are used in the feedback loop that improves ChatGPT's outputs. It could be argued, therefore, that there is a participatory aspect to LLMs like ChatGPT.

However, there are caveats to this utopian vision of an annotated ChatGPT. First, it is unclear how effective user edits of translations have been. While Constantine (2019) reports being impressed by Google's improved ability to translate Voltaire, other translators like King are less convinced: "I used the GT feedback tool to insert my English translation as the "correct" one. My feedback appears to have had no impact on how GT translated this text over 10 months" (King 2019, 81). Further, these tools are unpaid, a fact which allows Google to profit off the impression that their translation software is autonomous when, in fact, significant unpaid human labour is required for it to operate. This issue of invisible labour is also prominent in ChatGPT. As Estampa argues, "behind the autonomous appearance of AI tools...we find different levels of human resources displaced to different geographies, precured and invisible by the technology innovation industry" (Estampa 2024). Gray and Suri (2019) refer to this labour as ghost work, in which people are paid to perform tasks to enable machines to become automated. Whilst Gray, and Suri (2019) reflect on the advantages of flexibility such work offers, and that such workers find ways to collectively organise and survive the systems isolation, such systems often produce bad working conditions. For example, Gary and Suri (2019) argue that opaque working relations mean that ghost workers are frequently not paid for work they performed and had no recourse when this happened. By suggesting OpenAI integrate annotation into ChatGPT, we open the door for more of this kind of exploited, invisibilised labour within generative AI.

This opacity about labour hints at another issue: the general uncertainty around how these systems work. As King points out in her conclusion, "Beyond the debate over quality lies the question of transparency and intent: who is developing these ubiquitous tools? And how are they being used and toward what ends?" (King 2019, 88). We can see this opacity in the case of Constantine's (2019) study, where he attributes the improvement of Google Translate to the algorithm and not to the contributions of human users who more likely drove the changes. The same applies to ChatGPT. Due to the opacity of its operation, it is impossible to know which discourses its texts rely on and what its algorithm values most. What is clear, as the annotations of ChatGPT's texts reveal, is that these systems prefer the most common majority positions, or as Joque puts it,

that they value, “decisions the market will most likely reward” (Joque 2022, 32). However, we should be careful with such decisions that not only disregard minority groups who are seen as statistically insignificant but that also regurgitate negative stereotypes about them when they are represented. As Beer concludes, this process of “sinking of software into our mundane routines...means that these new vital and intelligent power structures are on the inside of our everyday lives” (Beer 2009, 993). In the case of Singapore, this software has sunk into the day-to-day governance apparatus.

It appears that ChatGPT has become increasingly integrated into the governing systems of Singapore⁸⁰. Of course, a limitation of my research is a lack of access to state processes. From the small window into ChatGPT provided by my interlocutors and their annotations, it appears that these systems and the civil servants within them are under increasing pressure to work quickly—something ChatGPT further facilitates. It could be the case that civil servants are not speeding up, as Rosa (2016) suggests they might be, but instead slowing down in order to annotate and critique ChatGPT outputs. However, as we saw in the previous chapter, MUIS intends to integrate ChatGPT into Fatwa decision making processes partially to speed up the work rate of the Fatwa committee. The intention, in part, is to speed up government processes—not slow them down.

In addition, in this section I have shown how creating texts from the archive necessarily replicates the information stored within that archive. This is equally true for ChatGPT, which tends to exclude minority views from its texts, preferring to reproduce the most common views. By doing so, ChatGPT replicates the foreclosed futures imagined for the Muslim community by the Singaporean state. By mechanising these processes, they can be treated as “objective” (Joque 2022). However, what is lost is human input on how these choices are made⁸¹. The argument, therefore, that improved technology and training users are enough to ensure their unproblematic use, is flawed. When these texts are used without critique, they are bound to perpetuate foreclosed futures. The resulting imagined

80 Chia, O. (2023) Public officers can use CHATGPT and similar AI, but must take responsibility for their work: MCI, The Straits Times. Available at: . Accessed: 04 April 2025.

81 This is another limitation of my research. At the time of my fieldwork, my interlocutors were not extensively using ChatGPT, and therefore it was hard to assess how they were using it. Furthermore, much more is now known about how to improve prompting. It could be the case that people are using AI systems in much more considerate ways, and further fieldwork would be required to explore this question.

futures are also harder to challenge because, as Salvaggio shows, we have no keys or legends to understand how they were written.

CONCLUSION: CHATGPT AND THE SINGAPOREAN MUSLIM COMMUNITY

After it became clear that ChatGPT 3.5 was spouting bigoted views⁸², including Islamophobic jokes⁸³, OpenAI applied content filters to their chatbot. Ostensibly, this solved the problem. ChatGPT no longer espouses its racist bias, at least publicly. Several commenters online refer to this new, nicer, ChatGPT 3.5 as a Shoggoth with a smiley face. A reference to Lovecraft's Shoggoth, an unimaginable cosmic horror that devours and destroys everything in its path except with the addition of a comforting emoji. When I first generated the text analysed in this chapter, it seemed benign enough, and some of my interlocutors even agreed. However, the longer my annotators looked, and as more people added their feedback, the roiling horror beneath the surface became clear.

What reading against the grain of ChatGPT's archive seems to suggest is that the LLM's database confirms the biased ideas of the Singaporean state. What we can say for sure is that these ideas are regurgitated by ChatGPT within its texts, and this suggests that much of its archive is made up of texts which contain such biases. Some may argue that more sophisticated filters, greater access to data, or numbers of parameters will solve this problem. ChatGPT's ability to produce unbiased, objective text is just one patch away. However, by treating ChatGPT outputs as text produced from an archive, this chapter aims to show how ChatGPT tends to reproduce power. Just as one more source within the archive cannot produce completeness or objectivity, one more piece of data within ChatGPT's database will not either.

82 Perrigo, B. (2023) OpenAI used Kenyan workers on less than \$2 per hour: Exclusive, Time. Available at: Accessed: 8 April 2025.

83 Samuel, S. (2021) AI's Islamophobia problem, Vox. Available at: Accessed: 4 April 2025.

gAI's inability to account for outliers means that it will continue to reproduce biased ideas common within its dataset. Its reliance on the most common existing data, means that it will be bound to regurgitating the stereotypes held by the majority against the minority. Finally, and most importantly, texts and their archives are a compromise in which the writer leaves out or includes information on the basis of their ideology. To return to a Derrida quote, text is "one discourse propped on another" (Derrida 1991, 197). In this way, ChatGPT texts are in continuity with archives and their perceived objectivity that preceded them. What ChatGPT lacks is accountability for those choices because they are often made by a machine and given the veneer of objectivity. To avoid these pitfalls, it is necessary for there to be a reconsideration of LLMs similar to the one that occurred in the archival turn. However, such an approach requires time, something that goes against the aims of AI systems like ChatGPT.

As we have seen, MUIS and the Singaporean state are committed to using generative AI. What will this mean for the imagined future of the Muslim community? At events throughout the city, I heard the phrase "AI won't replace you, but someone who knows how to use it might." Mostly, these critiques came from speakers at tech conferences and upskilling events selling the virtues of a digital future. However, for my annotators this "future" looks uncannily like the past and present. The words that came up most often, were "cliché" and "generic". These were platitudes they had all heard before, and beneath those were the echoes of racialised bias common in Singapore. As one annotator put it:

"For the future to be addressed like this [pause] you could make the case that as long as things don't change, maybe in 20 to 30 years there will always be this conflation between Muslim and Malay people."

Archives have always entailed inclusion and exclusion of ideas—decisions that are implicitly or explicitly driven by ideology. What ChatGPT changes is how it limits our access to understanding how those choices are made. Decisions about what information is valuable move into the hands of large tech companies that operate based on algorithmic cultures that value what is most common. Frequently, this allows mistakes, stereotypes, and simplifications like the conflation of Malay and Muslim in Singapore to proliferate. At the same time, because of its basis in probability, ChatGPT is endowed with the objectivity associated with mathematical certainty. As people are encouraged to work faster, and ChatGPT

facilitates that speed, more of these mistakes and biases will slip by unchallenged. Each time they do, the horizon of the future draws closer (Bear 2016). Without a critical engagement with the archive of LLMs, we risk the future becoming a perpetual regurgitation of the past, including all its mistakes. Perhaps annotation can be a tool to try and break open the black box of generative AI and allow us to understand more clearly how it reaches its pronouncements.

THE FUTURE, AN INTERLUDE: PART 2, RACE AND FORECLOSURE

The Singaporean state-owned electronic payment app E-pay released an advert in 2019 which included a Singaporean-Chinese actor, Dennis Chew, appearing as the four races which comprise Singapore's CMIO racial designation. When appearing as the Indian character, Chew's skin was darkened with make-up. When Chew appeared as a Malay character, he donned a tudung. In response, Indian-Singaporean rappers Subhas Nair and Preeti Nair made a parody song called "K. Muthusamy" (the name of the Indian character in the advert), with the chorus hook, "Chinese people always out here fucking it up." In response, both Subhas and Preeti were questioned by police and given a two-year conditional warning for inciting racial hatred. Later, in 2021, Subhas tweeted comments which were seen as violating that two-year warning, and he was sentenced to six weeks in prison, which he served in February and March 2025.

Then Home Affairs and Law Minister K. Shanmugam addressed the press in response to the original rap video, stating,

"Why take it so seriously? One video is not going to lead to violence... think of it like this, if we allow this, we have to allow other videos... what will happen to our racial harmony... suppose you allow this video attacking Indians, Malays... would minorities feel safe? ... There is a reason we have racial harmony in Singapore... We must maintain that, we will maintain that... we cannot allow these attacks⁸⁴."

At the 2023 AAA conference, Joshua Babcock analysed these comments, arguing that they represented an example of Singapore's anxieties about racial violence. He argued that, by making this slippery slope argument, Shanmugam was not only suggesting that violence was the inevitable outcome of videos which discussed race, but in fact collapsed the distance between discussing race and racial violence. Babcock focuses on Shanmugam's use of the word "attacks" throughout his speech, a word which suggests the violence has already happened.

84 CNA "Videos that 'attack another race' cross the line, says Shanmugam on Preeti's rap video". Accessed: 6 November 2025.

This incident, and the government response, I would argue, reflects what Crapanzano (2007) calls the thinning of the near future, in which people and governments become more concerned with the present and the distant future. Crapanzano (2007) points to America as an example of this presentism, in which some short-term threats are over-emphasised, such as terrorism, while long-term threats like climate change are denied.

In the controversy around the E-pay advert, we can see this short-termism in action. As Babcock argues, the anxieties around racial violence drive the response of the state, collapsing the distance between an incendiary comment and literal violence. The ironic outcome is that many feel race is not sufficiently discussed, allowing racial biases to persist and proliferate. Consequently, the near future, in which racial disharmony grows, is ignored and denied. In fact, Shanmugam would do exactly this in an interview days after the one discussed above, where he argued racism was reducing in Singapore. Meanwhile, the short-term danger of violence is over-emphasised.

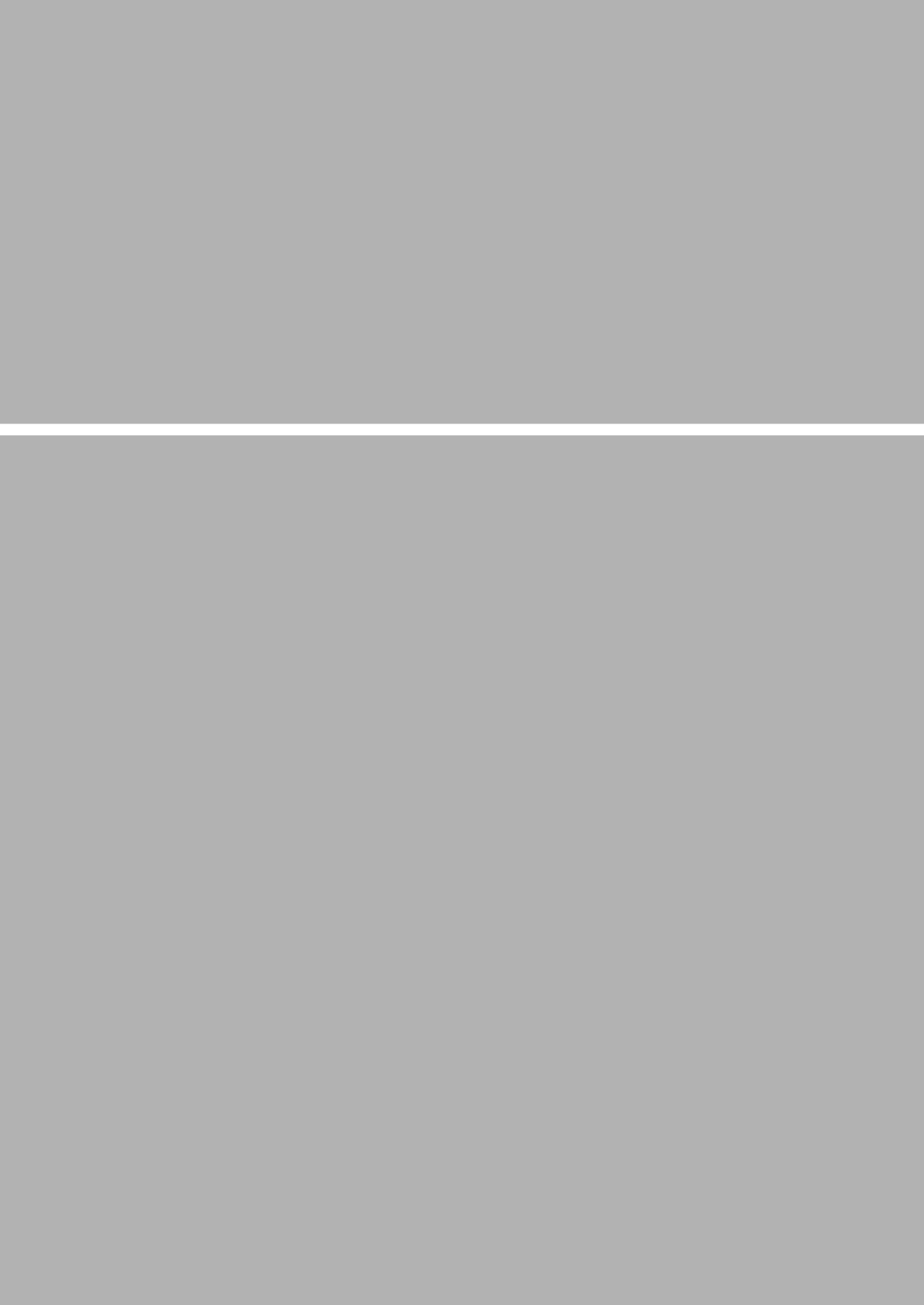
As the previous chapter demonstrates, AI systems may in fact worsen this short-termism. As I argued, the racial categorisation of Singaporean Muslims within ChatGPT's dataset can be deduced from its outputs, which replicate ideas such as the notion that Singaporean Muslims are not "modern." ChatGPT is therefore regurgitating the ideas of race put forward by the Singaporean state. As we have seen, such systems are being integrated into government processes, both within religious institutions and in other ministries. Consequently, such ideas about race are likely to be codified and entrenched within these organisations.

This is not only a product of state ideology, but, as I argued in my chapter on the epistemology of AI, is a product of the way knowledge is being created within the state. As digital culture researcher Ramon Amaro argues, "'algorithmic bias' is based on the fundamental principle of mathematics... which is already predicated on the reduction of chance and contingency: namely, to regress, to clean, to normalise the unexpected, and therefore normalise and exclude the opportunities that live outside the lines of political engagement" (Amaro 2020, 155). In other words, in order to make predictions, the identities of people must be cleaned and made to fit within prescribed categories.

Again, we see here Bear's foreclosed futures. The possibilities of the future are reduced, both in the sense that violence is made inevitable, and that identity is proscribed. The limits of what it can mean to be Muslim in Singapore, and what futures can be expected, are closed down. Up until now, this thesis has focused on how the epistemology, infrastructures and ideologies that come with algorithmic governance foreclose the future. However, as I stated in "Future Part One", the future is still open (Brown, Rappert and Webster 2000), and foreclosed futures can be challenged. Whilst there are certainly categories and expectations which are applied to the Muslim community of Singapore, this does not imply that all Singaporean Muslims remain within these bounded identities. As we will explore in the next chapter, perhaps one way to resist the categories of the AI archive, and AI epistemology, is to act in contradiction of their categories.

Of course, to act outside of these categories is not always easy in Singapore. Subhas and Preeti Nair are testament to that. Therefore, subversion of the prescribed future are often subtle and opaque. Consequently, there is an ongoing debate about visibility in resistance, especially to digital technology. When computer scientist Joy Buolamwini found that her facial recognition software could not recognise her face because its training set was made up almost entirely of white faces, she began a project of creating a more inclusive dataset. The solution, she proposed was for black faces to be more visible in the data set. Something similar could be proposed for better representing Singaporean Muslims in ChatGPT's archive.

However, there is a counterargument, an argument which also surrounds more traditional archives. As Carter (2004) argues, there is silence in archives, but sometimes there is power in silence. Perhaps, Carter argues (2004), some of those not included in the archive would prefer not to be recorded, so as not to become subsumed and categorised by it. Being visible, as I return to in the next chapter, is not always desirable. The challenge, then, is how to resist foreclosed futures without becoming subsumed by them?



Chapter 5

“Act Blur, Live Longer”

INTRODUCTION

In September 2022, I attended the Septfest arts festival in Singapore to see a new play by writer and activist Alfian Sa’at. “The Death of Singapore Theatre” critiques state censorship of the arts through malicious compliance. By staging the process of having a script approved by the IMDA (Infocomm Media Development Authority), Alfian blurs the line between onstage Singaporean arts, and backstage bureaucratic wrangling. As a researcher interested in how technology intervenes in the way Singaporean Muslims imagine the future, I wanted to see how one of Singapore’s more outspoken writers challenged the Smart Nation. By staging his censorship, Alfian was able to rightly, though facetiously, argue that he had done exactly as the state asked. However, Alfian was not the only performer at Septfest using “blurring” as an artistic method to critique the state.

In fact, all of that year’s Septfest was blurry. Founded in 1990, the arts centre Substation, that organises Septfest, was one of the first independent art spaces in Singapore. For many years it served as a hub for artists who could not, or did not want to, find space in state sponsored galleries. However, that year’s festival was different. After over thirty years at its location on Armenian street, the Substation board received news in July 2021 that the building would be closed by the National Arts Council for renovations (Substation 2021). Whilst an offer was extended to return, they were informed they would be one tenant among many. The board declined the offer, meaning that Septfest 2022 went ahead without a location. Instead, the community blurred beyond the walls of Substation, spreading to independent art spaces across the city.

The content of the festival also blurred. Having been removed from Armenia Street, the organizers announced that the theme would be uproot/rootless with Substation’s website asking, “When something is removed from a place, what remains?” (Substation 2022). The closure of Substation was never explicitly referenced, but the presence of that decision could be felt in every event. As the program stated, “Now, more than ever, we need to unearth the lessons that reside in...roots” (Substation 2022). Artists throughout the program took this opportunity to critique the state for their resettlement of indigenous groups, surveillance policies of the Smart Nation and relations with Malaysia – all in a suitably blurry manner.

It was within this wider milieu, that I found myself at a performance by Nurul Huda Rashid: A Singaporean Muslim artist. In *Nodes* Rashid critiqued how images of Muslim women become circulated and entrenched online. During the artist talk which followed, she argued that algorithms created the bounded category of “Muslim woman” who is either liberated or oppressed. Whilst the categorization of Muslims by the state has a long history within Singapore, as I will go on to explore, such histories were not mentioned in her performance, nor was religion. This was a result of an IMDA request for the removal of references to religion. Nevertheless, Rashid used blurring to infer her critique of the state and its categorization Muslim women. Given my research focus on Muslim responses to AI in Singapore, Rashid’s performance spurred me to explore how other Muslim artists used blurring to resist state categories.

I derive the concept of blurring from the phrase “act blur, live longer” which originates in the Singaporean military as advice for new recruits. In both Malaysia and Singapore ‘blur’ is a common epithet for someone seemingly clueless. In the case of military service, it is a reminder not to be a ‘smart-ass’ and incur the wrath of senior officers. However, given that national service is mandatory for Singaporean men, the phrase escaped its military origins, becoming advice for parents, managers, and politicians alike. In this expanded context acting blur refers to tactically implementing plausible deniability. Giving the appearance of cluelessness can be a useful tool. In the arts, blurring allows practitioners to skirt state censorship and still perform their work.

Blurring, I assert, is a practice of making oneself less visible to government surveillance without disappearing. Visibility can be a double-edged sword. Whilst being recognized by the state can grant access to rights, it can also lead to increased violence (Cárdenas 2017). Further, visibility can easily render one amenable to unwelcome forms of categorisation. This is particularly true when states use technology to make their citizens visible. Under Smart Cities, the data captured by cameras must be made computer readable for algorithms to sort and parse. As I will show, this Smart Nation sorting ‘objectifies’ categories by turning identity into bounded, countable data points. This reinforces the dynamic Rana (2011) illustrates, whereby Muslims are constructed as a racial category in opposition to the normative citizen. Therefore, the algorithmic reason accompanying Smart Cities entrenches, rather than produces derogatory categories like the racialized identity ‘Muslim’. Being blurry can make categorization difficult by resisting the imposed boundaries of identity.

Blurring is unlike Browne’s (2015) dark *sousveillance* where surveillance is undermined whilst keeping out of sight, because blurring is about being unclear publicly. In Browne’s dark *sousveillance*, the gaze of surveillance is inverted, the watcher becomes the watched. This inversion is performed whilst remaining out of sight (Browne 2015, 21). For example, Ali (2021) shows that the Muslim community in New York post 9/11 obscure their political participation, by having discussions about NYPD surveillance in private spaces. In contrast, I show that Singaporean artists make themselves visible to surveillance but act blurry by performing outside expected categories of the state. By performing publicly, blurring allows these Muslim artists to expand the category ‘Muslim’ by asserting a blurrier definition. This illegibility has the added bonus of offering plausible deniability. It is more difficult to censor work that cannot be clearly defined, as we see with Alfian’s “Death of Singapore Theatre.” Blurring, therefore, can help describe how Muslims resist the definitions of identity imposed by racialization.

By looking at the artistic works of Nurul Huda Rashid, Noor Iskandar and bani haykal, I explore how these Muslim artists not only evade censorship but also blur the categories of the state. In Rashid’s *Nodes* she blurs the simplified category of “Muslim woman” as constructed by algorithms. Iskandar’s *nur* blurs the walls of the mosque to imagine a Muslim community that transcends the boundaries which divide. Finally, haykal’s *momok elektrik* blurs the lines of Muslim religious practice to explore the possibilities of syncretism.

Why are Muslims so Visible in Singapore’s Smart Nation?

Singapore’s Smart Nation initiative began in 2014 with the data spark project. A collaboration between the government and telecoms business Singtel, the initiative installed 1000 sensors all over the city (Kong and Woods 2018). They tracked everything from air quality to traffic levels and crime rates. This network was expanded in 2016 with ‘Polcam’ and ‘Polcam 2.0’ projects which installed 7300 cameras (Koay 2017). Additionally, data from buses and trains are collected through tap to pay systems. This network of cameras and sensors, referred to as the “Smart Nation Sensor Platform”, forms the sensing part of the Smart Nation.

The collected data flows into GovTech, which assumes two crucial roles (GovTech 2019). Firstly, they develop software and services like “Singpass,” a platform enabling Singaporeans to access various amenities, from healthcare to public swimming pools. These services, in turn,

generate even more data. Secondly, GovTech sorts, parses, and anonymizes this data before disseminating it to government agencies and State-Owned Enterprises (SOEs). Within the government, this data fuels the creation of fiscal, technological, and social policies. The SOEs use the data to create innovative products for industry and government. These organizations, government and otherwise, represent the thinking part of the system. Together, the sensing and thinking parts of the smart city create a feedback loop which automates and rationalizes governance (Shelton, Zook and Wiig, 2015, 13).

Singapore's Smart Nation Project is driven by what some call the "imperative to be smart," (Calder 2016, 20) and others less charitably call "techno-anxiety" (Chong 2021, 247). Singapore is small, and poor in physical resources. Consequently, the ruling PAP (People's Action Party) has argued that the country is economically vulnerable and must be efficient and disruptive to survive. By many measures, the Smart Nation has achieved these goals. As Ang-Tan and Tan (2021) argue, Singapore's Smart City has been successful because the state's interventionist approach allows for seamless work between SOEs, government and private industry. During the Covid-19 pandemic, for example, digital infrastructure facilitated an effective state response (Koh, Lim, Tan 2020, 4). This has led some to view Singapore's Smart Nation as a laboratory for exploring urban governance challenges.

However, responses to Smart Nation projects have not been universally positive with many Singaporeans seeing it as surveillance. As Kong and Woods (2018) show, the Smart Nation project "ShineSeniors", which aimed to help older people live independently for longer by installing cameras and sensors in their homes, was widely resisted. Many participants resorted to covering cameras with towels. At a dinner during my first week in Singapore, friends described a time when their acquaintance had thrown a cigarette butt on the floor. No one was around, but like clockwork their fine arrived days later. Everyone agreed there must have been a camera watching. As Ho (2017) argues, whilst a sensing city creates efficient data feedback loops, it also creates a panoptical effect.

Racialization in Singapore

Of course, Foucauldian governmentality is not new in Singapore. As Abdullah argues, Singapore's key governing paradigm has long been state surveillance paired with multi-racialism, which argues that "ethnic and religious diversity is a problem that needs to be conscientiously

managed” (Abdullah 2016, 214). Consequently, ethnicity is made visible in Singapore’s everyday politics. Ethnicity is printed on identity cards, determines school subjects, and shapes quotas in the electoral system. These bureaucratic systems are arranged along the lines of the racial categories Chinese, Malay, Indian and Other⁸⁵ (CMIO). As Babcock (2023) shows, the CMIO is also entrenched in the visual culture of Singapore where the four races are represented in cultural dress and tied to their associated religious affiliation. For example, Malay racial identity is frequently conflated with Muslim faith. Consequently, Singaporeans are expected to occupy hyphenated identities like Singaporean-Malay and these identities should be perceptible. Therefore, Babcock (2023) argues that Singaporean citizens, along with the state, watch the boundaries of each other’s racial identity.

All Singaporeans are racialized in this way. However, Singaporean Muslims find themselves in a double bind. As Babcock (2023) and Chua (1996) argue, in the hyphenated racial identities of Singaporeans, the Singaporean should come first, followed by race. Muslim-Singaporean identity disrupts the hierarchy of the CMIO by complicating racial identities, as Muslims may be Malay, Indian or others (Tschacher 2018). Abdullah (2016) argues, therefore, that public displays of piety by Muslims risk destabilizing the carefully managed racial harmony of the public sphere. Therefore, all public acts of piety are scrutinized, regardless of how seemingly innocuous. This includes Muslim Singaporeans refusing to say Merry Christmas, which the PAP labelled as “exclusivist” in 2019. This term, ““exclusivist,”” is used euphemistically here to suggest that an act is the beginning of a slippery slope towards extremism (Abdullah 2021, 245). Müller (2018) refers to this labelling as ‘classificatory power’ where the state outlines expected behaviours which encourage normative compliance and that it surveils to ensure are carried out. If the cameras of the Smart Nation represent the physical manifestation of the panopticon, policies like the CMIO are its social manifestation.

However, the focus on religious identity is a relatively new phenomena in the racialization of Singaporean Muslims. Prior to independence, several race riots occurred, which the state claimed were sparked by Malay Muslim agent provocateurs from Malaysia and Indonesia. Consequently, race became the “primordial fault line” (Hong and Huang 2008, 22) of the country. The Malay community, whose identity was and still is conflated

85 Widely referred to as the CMIO, these categories emerged under British colonial rule but were maintained after independence by the PAP.

with Islam, were consequently perceived as a potentially destabilizing minority. This idea stems from the perception that Singaporean-Malay loyalties are divided because of their shared racial heritage with the majority population of Malaysia. This racial fault line resulted in Singapore's multiracial governance wherein Malays are frequently framed as a 'problem'.

The racialization of Singaporean Muslims shifted after 9/11 when Muslims around the world, and especially in minority contexts, were pressed to "prove their normalcy" (Echchaibi 2018, 58). As Rana (2011) argues, this pressure placed upon Muslims was part of a process of racialization in which they were constructed as a disposable racial type to be held in opposition with the normative citizen. Of course, in Singapore, Muslims were already racialized. Their presumed divided loyalties positioned them as in opposition to the normative citizen, who put their Singaporean identity ahead of all else. However, as the Singaporean state scrambled to align themselves with America, their multiracial governance shifted towards a more proactive surveillance of Singaporean Muslims in an attempt to pre-empt the influence of fundamentalism (Febrica 2010, 576). Under this new outlook, what primarily marked the Muslim community as deviant, was no longer race, but religion. As former Prime Minister Lee Kuan Yew argued "I would say today, we can integrate all religions and races except Islam" (Abdullah 2016, 222).

In 2003, the Majlis Ugama Islam Singapura (MUIS),⁸⁶ the Islamic religious authority and statutory board of the government, introduced the Singapore Muslim Identity, (SMI) a list of ten attributes the Muslim community should embody to be good citizens. Chief among them was the need to put their Singaporean identity above their religion. Signs that Singaporean Muslims may be heading down the path to extremism can be as innocuous as not eating with non-Muslims (Ab Razak 2019). More seriously, critiquing the state could make you a "bad Muslim" under the SMI (Hassan and Abdullah 2022). The SMI principles were written and distributed by MUIS. The agency controls many aspects of Muslim religious life including Friday sermons distributed across all mosques. These sermons are written in consultation with the Minister of Muslim Affairs and are often used to espouse the SMI. Therefore, the boundaries of ac-

86 Formed in 1968 MUIS is a statutory board of the government which reports directly to the minister of Muslim affairs. MUIS is governed by a council whose members are nominated from the countries various Muslim organisations and appointed by the president of Singapore. It is widely acknowledged that MUIS is co-opted by the Singaporean state (Abdullah 2013).

ceptable Muslim identity and behaviour are made perpetually visible, and the community's behaviour constantly scrutinized for perceived failures to “integrate”.

These SMI are an everyday reminder to Singaporean Muslims of how the state expects them to behave. As Ali (2016) showed in the campus surveillance of Muslims in New York, the creation of the good Muslim, bad Muslim dichotomy (Mamdani 2005) intensified the panoptical effect of state surveillance. When the accepted boundaries of behaviour are made explicit Ali (2016) found that self-disciplining increased, and political participation decreased. In Singapore, this dichotomy is made explicit through the SMI. The creation of an official “good Muslim” made all Muslims hyper-visible. In turn, by trying to live by the SMI, the dichotomy is strengthened, and Singaporean Muslims become “complicit in (re)producing the states classificatory power” (Müller 2018, 220). It is hardly surprising then that the installation of thousands of cameras and sensors was perceived as a surveillance system by the Muslim community.

Technology and Racialization

In fact, at times it appears that the Singaporean state invites such conclusions. On a poetry tour of Little India, our guide stopped next to a riot van parked by a police camera and pointed to a street sign which reminded us that a moment of anger could lead to a lifetime of regret. Surveillance is particularly intense in Little India after a protest in 2013 which was sparked by a bus driver hitting and killing a migrant worker. The neighbourhood is a centre for the migrant community, many of whom are Bangladeshi Muslim. As we stood there, our guide read this poem:

“What I learned in Malay class
is that mata is eye while mata-mata⁸⁷
is the police, a plural of eyes everywhere,
surveilling our suspicious lives.
Yet when aunties are congregating illegally
over mahjongg tables, when uncles are hustling
fake virility pills, when the warning siren blares,
“Mata lai liao!” what it really means is that eyes
are coming, eyes in blue and baton

87 As mentioned in the introduction, mata-mata is translated elsewhere in Southeast Asia as spy not police. This further cements the suspicion of police in a Singaporean context.

that tase illicit action from our bodies,
mata that become eyes through which
we see this country more clearly.”
(Nair 2023)

As the poem states, in Malay, the language widely spoken by Singaporean Muslims, the term for Police is mata-mata. Interestingly, when the police released wheeled robots to patrol Singapore, they named the machines MATAR. The choice to make this allusion in the language predominantly spoken by the racialized Muslim community reinforces an association between Smart Nation technologies and surveillance.

Such associations also have historical precedent, given the logics which empower the Smart Nation. As Whittaker (2023) argues, the theoretical roots of “data governance” lie in plantation management, where workers and crops were transformed into interchangeable units allowing plantation owners to manage them from a distance. This approach to governance was applied to colonies like the Malayan Peninsular where data gathering was common practice, including the use of census and mapping (Noor 2019). Such strategies have been reborn in cities like Singapore, where technology networks extract data to govern “from above” without engaging with the specificities of the city and its inhabitants.

The Smart Nation is the newest tool in top-down governance. What has changed is the asymmetry of access to these technologies. Citizens cannot hope to access the volume of data or scale of infrastructures held by states (Powell 2021). In the past, people could theoretically challenge state narratives with their own information. However, creating a competing Smart Nation is less feasible. This raises the question of what Singaporean Muslims can do to resist the categorizing logics of racialization and the Smart Nation? Further, how can these critiques be made without falling foul of the seemingly all-seeing SMI?

Public Resistance and Art

In the literature on resistance, such panoptical governmentality has often been shown to force activists into the shadows. As Ali (2021) shows state surveillance can force political participation into private venues. Likewise, Browne (2015) and Mann (2013) demonstrate how the surveillance induces resistance which respectively operates from outside visibility and seeks to invert the panopticon. However, it is not always the case that surveillance results in compliance, or forces activists out of the

public sphere. As Yonucu (2023) describes in Turkey, state suppression of activism impels activists to become more visible and active in public. Activists, Yonucu argues, choose to remain, or even become more visible, partly in deference to the martyrs of the movement who preceded them. In this way, the behavior of activists is influenced more by a desire to ethically align with their predecessors, than by the effects of panopticon. Such deference to predecessors also appears in the articulations of Singaporean artists. As Alfian Sa’at, author of “Death of Singapore Theatre” told me; “There is a historical lineage...theatre has always been political in Singapore, it’s always been this space for dissent.” He went on to list the arrests of several playwrights through Singapore’s history: Kuo Pao Kun in 1976, Third Stage in ’87, and Necessary Stage in ’94.

Whilst visible resistance exists under regimes of surveillance, they need not be overt. As Abu-Lughod (1990) argues, acts of resistance can be quiet, personal and every day. Further, as Ihmoud & Cordis encourage us to remember, resistance does not need to come in the form of “masculinist martyrdom or self-effacement” (Ihmoud & Cordis 2021 826). They encourage anthropologists to focus on acts of living rebellion in which people struggle to survive under the conditions of white supremacy, settler-colonial, and capitalist power “while also tending to the forms of expansion, imagination and rearticulation that always already exist in and beyond this frame” (Ihmoud & Cordis 2021, 813). The artworks in this paper occupy the blurry spaces between these overt and covert resistances that emerge from surveillance. The artworks presented here aim to affirm the complexity of Muslim Singaporean experience from within a system of surveillance which demands uniformity and legibility. They are acts of living rebellion which demonstrate how Muslim experiences fall outside the limiting imagined categories of the state.

The Singapore art scene may not seem like fertile ground for resistance to state surveillance. Censorship is common, for example, all plays must be read by the Infocomm Media Development Authority (IMDA) before being staged. The state has become increasingly invested in the arts attracted by the economic draw of the global art market, and tourism. Starting in 2000, the Ministry of Culture, Community and Youth ran a program called “the Renaissance City” which aimed to use arts to make “the leap from an industrial to a knowledge economy” (National Arts Council 2021). In 2023, this was replaced by the National Arts Councils “Our Arts Plan” (Ministry of Culture Community and Youth 2023). In both cases, the arts are part of the state’s national plan for economic growth. Consequently,

the National Arts Council has become a central hub of arts funding in Singapore. This breeds its own censorship, as two artists explained to me: “a lot of art making relies on government grants... it is a psychosis in itself ...things are heavily funded by the government [so] people play by the rules in order to get a commission.” At this point, the other artist chipped in, “artists don’t even want to put themselves at risk of trying.” However, as Alfian pointed out there is a lineage of artist/activists in Singapore. This is in part because of arts’ dismissal by politicians. In 1968, former PM Lee Kuan Yew, called poetry “a luxury we cannot afford” (Gui 2018, 10). This dismissal of art as unnecessary, means that whilst artists are widely censored, there is also leeway for their work to critique the state because the importance of their work is downplayed⁸⁸. How can Muslim artists conceal their critiques of that state, whilst opening spaces in the Smart Nation to critique the racialization of Muslim Singaporeans? In the “Onlife Manifesto,” Hildebrandt (2015) asks how citizens can create “empowering opacity of the self...that incorporates the need for self-expression, identity, and performance as well as the generosity of forgetfulness, erasure and the chance to reinvent oneself?” (Hildebrandt 2015, 185). For Singaporean Muslims, living within a pan-opticon with strict boundaries, this question is particularly pressing. Fortunately, an answer already exists in Singapore: blurring.

Nodes: Blurring the Figure of the Muslim Woman

In a room of the gallery T:>works, I attended the SeptFest performance Nodes. Nodes, by Nurul Huda Rashid was one half of a performance called Sillage, the other half provided by Nicole Phua’s Nizalia. The room was split in half: on one side Phua repeatedly prostrated before a large urn placed on its side allowing white powder to spill out onto the floor. On the other side of the room, in tandem with Phua’s piece was “Nodes”. Pieces of diamond mesh fencing, rolled into cones and connected with wires, were scattered across the room. As Phua repeated her ritual movements, Rashid moved through the space attaching search terms about Muslim women to the wires. Each one connecting Muslim women across the world together, each binding them to identity markers. Having created the network, Rashid moved among the crowd. Imitating machine vision, she drew sketches of audience members accompanied by a handful of words which aimed to classify them. This included me, still masking in

88 It is of course worth pointing out that the state is not a monolith. As ethnographies of the state explore, they are full of nuance, contradiction, and complexity. However, this article is not an ethnography of the state. Instead, it focuses on how my interlocutors respond to a state which they frequently experience as, and which often asserts itself as, a monolith.

the midst of the pandemic. I immediately felt the acute discomfort of being watched. The sketches were then handed to the respective audience members. Having collected all the information, Rashid began cutting through the connections causing the ‘data’ to spread across the floor.



Figure 11- Phase 1: Performative, Women in War, activated in Nodes (2022) Photo by Nurul Huda Rashid

A key theme of 2022’s Septfest was surveillance, although, of who and where, remained blurry. In Rashid’s ‘nodes’ she connects the surveillance of Singapore to how Muslim women’s identities are circumscribed. In Singapore, the ten desired attributes of the SMI outline a particular vision of how “good” Muslims should act. Number five of the SMI list is, “Progressive, practices Islam beyond forms/rituals and

rides the modernization wave” (MUIS 2006, i). If the process of racializing Muslims “trades on pejorative characterizations of religious groups” (Meer and Modood 2010, 83), perhaps the most pervasive pejorative of the Singaporean Muslim community is that it requires modernization. At the centre of this characterization is the tudung, a style of hijab common in Singapore, which for many years has been “set in antagonistic

terms with the modern” (Zainal and Wong 2017, 109). Frequently, it has been argued that the tudung, as a visual symbol of difference, upsets the balance of racial harmony. For this reason, wearing tudung was banned in public sector jobs for many years (Baharudin 2021). As Rashid writes for the Singaporean blog “Beyond the hijab” this discourse around the tudung creates a dichotomy between oppressed tudung wearers and liberated modern women (Rashid 2016). In her artist talk after *Nodes*, Rashid stated that the cutting of the wires represented breaking away from these binaries which disregard “all other possible narrative threads that make up ‘Muslim women’” (Rashid 2016).

Nodes is situated within Rashid’s wider work on the imagery of Muslim women. At a retrospective talk on her work, Rashid reflected on how her artistic practice has changed. In an early work called *Hijab/Her* (2012), Rashid photographed Muslim women in hijab to reflect on issues they face in Singapore. However, considering these images in conversation with colonial archives she concluded that her images recreated colonial imagery. As Rashid explained, during the French colonization of Algeria, photographers were disappointed to find Muslim women did not look like the orientalist images they were used to. Consequently, they posed women in studios to conform to their imagination (Alloula, Harlow and Godzich 1986). These images then circulated via post-cards solidifying the orientalist image of Muslim women. These images were not neutral snapshots but carried ideology which shapes the racialization of Muslim women to this day.

For Rashid, it was both the creation and circulation of these images which created the liberated/oppressed binary of Muslim women. Likewise, the good/bad binary of our time is perpetuated by the circulation of images online. All online images are tagged with metadata, allowing them to be sorted. This means that the online archive of images of Muslim women is sorted to create an aggregate image. Like the orientalist images of French photographers this metadata contains biases. As Just and Latzer (2017) argue, algorithms shape the communities they govern. Developers design software, which is encoded with bias from their social setting, which in turn informs what information is deemed more relevant and displayed to more users. In the Smart Nation, similar processes are followed. How data is tagged and sorted reflects existing categories of good/bad Muslims and liberated/oppressed Muslim women. Under these binaries, the tudung is equated to being Muslim. This despite many Singaporean Muslim women not wearing it. The state views tudung as anti-modern, and therefore the

Smart Nation categorizes women in tudung as anti-modern Muslims. In *Nodes*, Rashid turns these categorizations on her audience. The audience who are normally voyeurs intimately experience this process of being tagged and sorted. Their faces are sketched alongside questions such as “race? identify? self”. When handed these sketches audience members feel the usually invisibilised process of racialization in action.

In *Nodes*, Rashid blurs her critique of racialization by the Singaporean state. Whilst it is clear that *Nodes* critiques the limiting categorizations of Muslim women; Rashid avoids the claim that she is a “bad Muslim” by generalizing her critique. While the Singaporean state and its infrastructures are actively engaged in the racialization of Muslim women, Rashid does not name them. I would learn later that this was not only an artistic choice, but a direct response to the IMDA. As Rashid told me:

“When I first submitted our artist statement...it was perceived as being solely about religion as we were using performance to speak about images of Muslim women... We then had to re-prioritize our topics”

The shift to speaking generally about technology rather than Muslim women, allowed Rashid to present her ideas whilst skirting state interference. Further, this blurring was enhanced as *Nodes* was performed during Septfest, one of several performances obliquely prodding at the state and its surveillance infrastructures. Her work also blurs categorizations about Muslim women. In *Nodes* she literally cuts the ties that bind identity markers to Muslim women. Finally, she blurs the line between systems which circulate racialized images of Muslim women and the consumers of those images. In this way *Nodes* is a reminder that the categories of oppressed/liberated Muslim women are empowered and (re) produced by us, not systems – Smart Nation or otherwise. Ultimately, Rashid shows how technologies, like the camera, the internet, and the Smart City, can empower racialized categorizations, by circulating and perpetuating images of Muslim women. While Rashid was forced to adapt her work, she still performed her critique by blurring.

Methodological Interlude 1

After Rashid’s performance at Septfest 2022 I went to speak with her. She had already heard of my project; a friend sent her the call for PhD applicants in 2021. She was friendly but understandably suspicious of a British man from a Dutch University studying Islam and AI in Singa-

pore. We agreed to talk again via skype a month later. Little did I know this meeting was to “check if I was cool” as Nurul would explain later. Luckily, she concluded that whilst a bit too serious, I was trustworthy. When I returned a year later it was via Nurul that I met most of the Singaporean artists I know. She emailed both haykal and Iskandar on my behalf, and behind the scenes assured others that I could be trusted. In Singapore, where there is what a friend jokingly called “snitching culture⁸⁹” communities of trust like this are vital. This is particularly true when communal spaces like Substation close. In a context like Singapore, community can look like a network of friends and peers, who can verify new faces.

nur: Blurring the Institution

After Rashid connected us via email, I met with Iskandar at a biriyani place in the basement of Funan Mall. It was the first of many such dinners, after which we would wander around the city. One evening while walking, we passed an advertisement for a play being performed in Fort Canning, a park and military base on a hill in central Singapore. “I would never go there at night” Iskandar commented, “too many jinn” (beings concealed from the senses). Such stories of the unseen, or al-ghaib, swap hands frequently among Singaporean Muslims. It is believed that Fort Canning is particularly haunted, as former Malay sultans built their palaces on its peak, were buried there, and forbade others from entering. Such beliefs are frowned upon by MUIS and its SMI which promotes modernity, not superstition. However, it is on the esoteric, and spiritual which Iskandar’s artistic practice dwells.

An interdisciplinary artist and poet, Iskandar’s practice focuses on “themes of losing, death and forgetting.” Since 2015 Iskandar has researched and photographed mosques around Singapore for his work nur. The project explores the absence of Islamic art within ritual spaces in Singapore. Given the centralization of mosques, Iskandar told me that these buildings “boil down to a very moderate form of standardization” tending towards aesthetically neutral spaces which embody sanitized state approved representations of Islamic faith. In nur Iskandar “attempt[s] to reconcile the beauty in such encounters of losing.” (Iskandar 2021) This is reflected in the images of mosques which slowly blur and brighten into a beautiful array of colors.

89 Beyond state surveillance, there is also various forms of citizen surveillance in Singapore. For example, the now defunct website stomp paid for videos of people breaking social norms (Abidin 2017).



Figure 12–Image from nur exhibition. Photo by Noor Iskandar

Since 1975, all mosques in Singapore have been built and refurbished under MUIS’ Mosque Building fund (MBF) (National Library Board 2023). The MBF is a non-mandatory fund for constructing the replacements to kampong (village) Mosques. This fund was part of a wider move to encourage citizens out of the kampong (National Library Board 2023) and into newly built urban developments known as HDB⁹⁰. Seng (2009) argues that along with rapid urbanization, centralization also aimed to integrate semi-autonomous kampongs into the main citizenry, thereby increasing state control. This policy was a success, with most mosques relocated, rebuilt, or refurbished. Through these centralized Mosques MUIS espouses its brand of Islam, concerned with ‘modernization’ and upholding the SMI. Since 1968, sermons delivered at Singaporean Mosques are read and vetted by the Minister of Muslim Affairs and frequently contain government talking points.

However, there remains a sense of loss within the community for kampong mosques. This is particularly evident in the Facebook group “Lost Mosques of Singapore” which archives images of these mosques (Ibrahim 2023). The overriding opinion in these groups is that whilst current mosques receive more funding, they have become standardized and now lack the beauty, and idiosyncrasy of their forebears. With this also comes

90 Named for the “Housing Development Board”.

a loss of autonomy within communities to define their faith. It is this sense of loss which Iskandar explores in *nur* through the sufistic concept *fanāʾ*.

The word *fanāʾ* comes from the Arabic *faniya* meaning obliteration (Wilcox 2011, 96). Wilcox (2011) argues that unlike similar terms which appear in Buddhist, Vedic, and Judeo-Christian traditions, within Islamic Sufistic traditions this term is paired with the concept *baqāʾ* which translates to subsistence or survival. *Fanāʾ*, therefore, is not just the negation of the self through detachment, but the possibility of existing closer to Allah by disconnecting from the material world. Ahmed ties this concept of disconnection from the material world to *alam al-ghaib* arguing that “Sufis aspire [to] the uncorrupted pure Truth of the Unseen non-material reality to which material reality and its truth stand in a figural or metaphorical relation” (Ahmed 2016, 20). For Iskandar this concept was central to understanding the loss of aesthetic diversity in Mosques.

Within Islam, *Alam al-ghaib* refers to “what is unseen, imperceptible, covered, veiled, concealed, internal and hidden.” (el-Aswad 2019, 279) Whilst this category includes ghosts and *jinn*, it also includes the mundane like WIFI signals. This means that parts of the Smart City, usually invisible, like cables and electrical currents can be found in *alam al-ghaib*. Instead of assuming that everything can be explained by what can be perceived, *al-ghaib* guides the mind outside what is visible (Bubandt, Rytter and Suhr 2019). The unseen is a common theme in Malay Muslim art where the concept is used as “one way of contesting the systematically hegemonic ways of seeing rationally and considering modes of seeing which have been left out” (Iskandar 2019, 263). People, buildings, and categories can blur at the edges by imagining how they extend into *alam al-ghaib*.

By blurring walls in his images, Iskandar imagines a mosque without them, and with it blurs the institution. In this way, he critiques the centralized, and racialized framing of Islam espoused in the mosque through the SMI. By losing the mosque, it is also possible to move closer to the pure Truth which is not represented in physical ritual spaces. For example, Iskandar points to how gender inequalities are emphasized by the limitations of Singapore’s mosque aesthetics. Whilst men get to look at beautiful fractals as they pray women are often left to look at blank

walls⁹¹. By imagining the mosque as a “placeless entity” Iskandar, “flattens out that...hierarchy”. In the mosque without walls, it might also be possible to remove binaries like good/bad Muslim as constructed by the SMI by moving beyond spaces controlled by the state.

During the early years of the pandemic this mosque without walls shifted from theoretical possibility to reality. As Iskandar explained, in 2021 during Syawal prayers “everyone was at home...every household turned on their TV then they had this kind of congregation... it’s so profound. This constellation of congregations where people are not physically together but are together in virtual space.” For Iskandar then, the technological is a possible route to blurring distinctions. By moving into virtual spaces, through digital technologies, something closer to the pure Truth of Sufism can be reached. Reflecting on this pandemic experience Iskandar told me, “That was the first awakening I had where it was like, maybe this is the future”.

During the writing process for this chapter, Iskandar re-read this section and asked for a caveat to be added. In his view, the wall-less mosque existed somewhere outside our experience, “it alludes to a sense of dreaming or something more afterlife-ish, [it] alludes to that sense of impossibility, or of a melancholic dream, a utopia which will never materialize”. For one, he pointed out that the virtual mosque negates religious and spiritual aspects of physical congregation. For example, the reward of prayers is greater the larger the congregation. As Barbrook (1999) argues, hierarchies in the physical world prevent cyberspace from liberating everyone, instead privileging those with power and access. As Iskandar told me, “That is something I am aware of that’s why I mention my idea of a mosque without walls is utopic...because there are all these unresolved aspects”. The mosque without walls then exists, in a realm we cannot reach.

Through blurring Iskandar critiques the States fixed categories about Muslims and their prayer spaces. However, Iskandar only references MUIS in the online description of the work stating: “This can hopefully encourage concerning bodies like MUIS to augment the aesthetic experience” (Iskandar 2021). Instead, his critique of the bounded mosque is implied through his literal blurring of the walls of Singaporean spaces of worship. By criticizing the aesthetics of Singaporean mosques, Iskandar

91 Prayer spaces allocated for women are often relegated to side rooms of the Mosque, marginalising them physically and socially.

is also able to critique the bounded categorization of Islam espoused in these spaces. As Iskandar concludes in nur's accompanying essay "One can also yearn that the margins of Islamic experience can position itself as valuable" (Iskandar 2021).

Unlike in *Nodes*, technology holds an ambiguous, melancholic position in nur which is emblematic of Iskandar's artistic practice. Through Iskandar's experience during the pandemic lockdowns, he imagined technology being used to blur boundaries, not enforce them. As he put it "I want a placeless, wall-less mosque...now with AI people of the world could construct this idea of the mosque". As we see in Rashid's work, technologies all too often, replicate, reinforce, and circulate negative tropes including racialized identities of Singaporean Muslims. nur critiques current technological systems by imagining radically different ways of using them. However, for now, the Mosque without walls exists beyond reach, a ghostly dream.

Methodological Interlude 2

After being vetted over skype, I was invited to a workshop run by Rashid called "How to see like a computer". The great and good of the Singapore art scene, plus me, brought along images which we labelled as if we were computers tagging them for a database. My interest in tech and art prompted Rashid to recommend I meet with haykal, a sound artist whose work looked at the uncomfortable intimacy between machines and human labour. With Rashid's seal of approval, we would later meet at a café in Kampong Glam to discuss among other things, his work "momok elektrik." A year after that meeting haykal and Iskandar would collaborate on a workshop. The workshop focused on encryption, a core idea within haykal's artistic practice. In the Singapore art scene, knowledge of how systems of control work, and how to negotiate with them are shared via such workshops and public works. Learning to blur, therefore, is a dialogical process.

momok elektrik: Blurring Categorisation



Figure 13– momok elektrik, in 2021. Photo by bani haykal.

In an ominous dark room of SAM (Singapore Arts Museum), the audience encounters seven figures covered in burlap sacks. Each sack is stamped with Jawi, the vernacular Malay writing system, and obscures a speaker from which disembodied Malay chants emanate. Each of the voices is controlled by a sampler which selects the next audio clip based on BPM. However, each sample is interdependent, meaning that they trigger one another to play. This creates a shifting soundscape partly controlled by machines and partly controlled by the human voice. The result is a haunting cacophony of voices disconnected from a perceptible source. Several of the gallery sitters at SAM describe the experience as scary (Singapore Art Museum 2022). The piece was conceived by haykal, not as scary but as a meditation on the categorization of Muslim identities in Singapore.

haykal instructed the singers who performed for Momok Elektrik to imagine they were spellcasting. When I met with haykal to discuss his practice he explained this was a reference to syncretic forms of Islamic practice: “It doesn’t have to be this way...when Islam came to the region syncretic forms of practicing Islam were encouraged.” However, as religious authority became centralized at MUIS throughout the 1960s, and religious practice was guided by ideas of modernization, certain religious practices became prohibited. Still, as haykal told me “Syncretism does still exist today the difference is that there are state laws which start to determine that certain things are Islamic and certain things are un-Islamic... like cultural practices...which involved trance are suddenly not considered Islamic”. haykal is referring to the banning of Kuda Kepang, a traditional Malay dance, which was labelled unislamic by MUIS (MUIS 2025). The Malay chanting of momok elektrik acts as a form of resistance to such limiting categories of what Islam can be. In redrafting this

section, bani asked me to include this description of how the chanting in momok elektrik resists the capture of Islam by limiting frames and machines.

“the chanting heard thru [sic] momok elektrik is, for me at least, a testament to the importance of oral tradition, where passing of knowledge, sharing of information, healing, knowing etc is concerned; that the voice is what machines desire to capture but voices will escape, be amplified and repeated beyond the confines of capture.”

haykal has first-hand experience of the limiting categories of race and religion in Singapore. As we have seen, the CMIO has been used to assert the states classificatory power (Chua 1995, 110). Race is used to assign which language students learn as their mother tongue. Malay is taught to Malay students, Mandarin to Chinese students and Tamil to Indian students. However, this creates problems for those who do not fit these neat categories, like haykal who is Indian Muslim. As he explained, “I was subjected to this when I was a lot younger being identified on my ID card as Indian but Muslim, you are Indian, but you are not in Tamil class for instance, why is that?” With Malay being the dominant language of Islamic institutions in Singapore, Indian Muslims frequently find themselves in a strange no-man’s land (Tschacher 2018). The use of Malay and Jawi chanting in momok elektrik, refuses both the conflation of Malay and Islam, and that of Islamic practice and what the state proclaims it to be.

Perhaps because of his experiences with language, and state categorization, Jawi script plays a central role throughout haykal’s work. In momok elektrik, for example, Jawi appears as a form of encryption. As he explained it to me, Jawi contains six unique characters which he uses to encrypt his works. For example, in the piece “sifrmu” haykal’s poetry is encrypted into these six unique Jawi characters. The result is poetry which is unreadable without the cipher and knowledge of Jawi. Jawi was not chosen at random but relates to haykal’s early experiences of reading the Quran. Like many Muslims I met in Singapore, haykal learned to recite the Quran but not to read Arabic. For haykal, this meant that he did not consider himself to be reading the Quran, unless he was reading it in Jawi. The Malay script transformed the Quran into something intimate for haykal. This is the core of encryption: the transformation created by intimacy. Language can be a form of encryption, not only because of the

way it excludes, preventing some from reading, but also how it draws those in who can understand.

Whilst *momok elektrik* is about the intimate relations between the Muslim community and its language and culture, it also reflects on how the state abuses, intervenes, and disrupts this intimacy using machine technology. In supplementary material to *momok elektrik*, haykal writes a (haykal 2024) in which he discusses non-consensual forms of machine intimacy. As he writes “how much of our essence is now stored and held captive in these devices through numerous sensors and processed by big tech” (haykal 2021). The sensors he refers to here include Singapore’s Smart Nation. Through these sensors, Singapore is frequently extracting data from its citizens. This data then flows into GovTech, the government body which manages the Smart Nation. Here haykal is reflecting a concern which is widespread. As Couldry and Mejias (2019) have argued, data extraction is becoming increasingly invasive occupying more and more of our lives, not just in the public spaces, but also in our private lives. As they argue, data is the material produced by “abstracting the world into categories” (Couldry and Mejias 2019, 6) and is not inherently bad or new. What has changed is the normalization of social relations in which data extraction is constant and happens without people’s awareness. The Smart Nation is an example of such pervasive data extraction. Singaporeans intimately engage with the Smart Nation every day, because even walking down the street turns individuals into data points. This intimacy transforms Singaporeans into interchangeable units or as haykal terms this process, “tokenization” (haykal 2022). haykal proposes that Muslims resist this categorization by becoming less visible, or more encrypted, through intimacy with language and culture. By representing syncretic forms of religious practice, haykal suggests that Muslims blur the boundaries of the “Singaporean Muslim”.

This theme of resisting categories re-emerges in haykal’s other work. In 2015 haykal created *necropolis* for those without sleep: an installation in which two mechanical hands play chess (Singapore Art Museum 2015). Upon arrival at the gallery, viewers are randomly assigned one of two kinds of tickets. One allows the viewer to roam freely around the space, while the other allows only 50 steps. Entering the room is another ominous experience. It is dark, and the chess game, lit with bright white spotlights, is flanked by two lifeless orange boiler suits. Bodyguards without bodies. The hands themselves move about over the game, heavily wired, as if on life support. If the viewer has the luxury of

free movement, they might notice that the game is unbalanced. As the works description at the Singapore Art Museum (SAM) notes “the orange team is significantly disadvantaged, consisting only of Pawns, a Knight and a King” (Singapore Art Museum 2015). Stay long enough, and viewers may notice that the hands play seven identical games on repeat, not automated but following a script.

necropolis alludes to Von Kempelen’s “mechanical Turk⁹²”. The fraudulent chess playing automaton later revealed to be operated by a person hidden within the machine. The parallel haykal is drawing with the Smart Nation is clear in how government offices discuss tech governance. In May 2023, I attended an AI workshop run by the government funded tech business “AI Singapore”. At the event, the host described AI, and its underlying infrastructures, as models of the real world. The more data in the model, the more accurate its simulation. Soon, with the help of Smart Nation data extraction, near perfect models of the real world would be created, rendering theory obsolete and generating objective policy. In the same breath, the host also described a major pitfall: bias in the existing data set. What haykal’s “necropolis” reflects on is that this bias is created by human made scripts and categories like CMIO, and the SMI which is the replicated by the Smart City. As haykal put it to me, this “machinery validates what is and isn’t [for] the state or tech corporations, these are entities which are constantly desiring to ensure that there is some form of control over how this information surfaces and gets regurgitated”. The machine of the smart city is the false automaton, simply moved by the hand of the state and its categorizations.

Throughout haykal’s practice he undermines state categories by blurring them. While the state uses language to enforce racialized boundaries, in haykal’s work, Jawi is used to resist them. Whilst MUIS defines syncretic practices as “un-Islamic”, bani’s ‘momok elektrik’ embraces syncretism through reference to spellcasting. Suddenly, the boundaries of what Islam is, and can be, are blurry. At the same time, Jawi with its unique characters acts as a cipher, drawing in the Muslim community of Singapore, whilst keeping out the prying eyes of the state. For the state, clear boundaries help to maintain categories which both ensure self-policing, as in the SMI, but also make citizens countable or tokenizable. These categories make the operation of the Smart Nation possible. By refus-

92 An allusion also made by Amazon’s online market for piece work MTurk.

ing to be tokenized, haykal argues Singaporean Muslims can resist state racialization. In other words, they can act blur to live longer.

Methodological interlude 3

The knowledge of acting blur described in this chapter is a product of public negotiations made by artists within the surveilled environment of Singapore. This knowledge was shared to the community at public events like Septfest and built through workshops where artists collaborate with each other, and members of the public, to imagine in the blurry spaces of Singaporean governance. Whilst it is standard in social science is to anonymize, I felt that removing bani, Iskandar and Nurul’s names from this chapter would, as Svalastog and Eriksson (2010) argue, excluded them from genealogy of that knowledge. As Kolankiewicz (2022), whose work focuses on anti-Muslim racism argues, participants in research deserve the right to speak in their own name. In particular, to research and write about the dialogical community of artists in Singapore as a monologue felt limiting at best. Consequently, the process of writing this chapter meant checking in with these three artists to ensure that their work was well represented, and that they were still comfortable with being named. This chapter is, therefore, an effort to collaboratively represent how artists in Singapore deal with the limiting categories of race enforced by regimes of surveillance.

This is not to imply that I did not have concerns about the implications of this paper. As the possibility of publication became more real, I consulted with to my interlocutors repeatedly, perhaps to the point of being annoying. They affirmed that they were happy to be included but it continued to weigh on me, even when my supervisors reminded me that my responsibility was to the wishes of my interlocutors. Still seeking reassurance, I co-worked with a friend from Singapore and explained my anxieties. What if the government reads my thesis? What if it caused problems for the artists? What if they were censored because of me? “Maybe this helps” they said: “Nothing you have written is a surprise to anyone in Singapore”. It was a humbling reminder that cultural anthropology, as Michael Herzfeld argues, is in part the comparative “study of common sense” (Herzfeld 1997, 301).

CONCLUSION

As I have shown, blurring is an act of being unclear publicly to contest the rigid categories produced by the state, and the Smart Nation. Such categories have long existed in Singapore where the Muslim minority is framed as a threat to racial harmony, and where race has been simplified into four categories. However, the Smart Nation gives these categories a new technological sheen. Not only are racial divisions asserted by the state but objectified by machines. By blurring artists and activists disrupt these boundaries. Blurring in these examples, is the act of appearing as a member of a category whilst acting in ways which blur that categories limits. These artists appear as Muslims in the public sphere whilst not conforming to the expectations of the SMI, CMIO, MUIS, or the state, which have collectively constructed racialized category of “Muslim” in Singapore. Such categories exist elsewhere therefore the concept of blurring can be used to explore how the racialization of Muslims, as described by Rana (2011), are resisted elsewhere.

In Mann’s (2013) *sousveillance*, techniques are used to invert surveillance, allowing the many to watch the few. Whilst Browne’s (2015) dark *sousveillance* undermines surveillance from the shadows. Blurring likewise seeks to resist surveillance, however it does so by undermining the categories which empower surveillance networks. Those blurring become less legible, by acting in ways contrary to those enshrined by surveillance. Blurring is done publicly where it can be perceived by state apparatus, but it disrupts, unsettles, and confuses state categories. In this way, blurring is a resistance akin to Abu-Lughod’s (1990) romantics of resistance which do not aim to overthrow whole systems, but to subtly destabilize hierarchies of power. However, where Abu-Lughod’s acts of resistance may occur privately, blurring is a public act of refusing limiting state categories and surveillance.

The Singaporean state uses MUIS to construct the figure of the “Singaporean Muslim.” The expected behavior of Singaporean Muslims is spelled out in the SMI. These expectations are in turn circulated via Mosque sermons, express themselves in policing of religious symbols like the tudung and codified through language in CMIO policies. The creation of the “Singaporean Muslim” emphasizes the panoptical effect of the state. If the state defines what behaviors are acceptable, then citizens have clear ideas of how-to self-discipline. This panoptical effect is further entrenched by Smart Nation technologies which act as physical

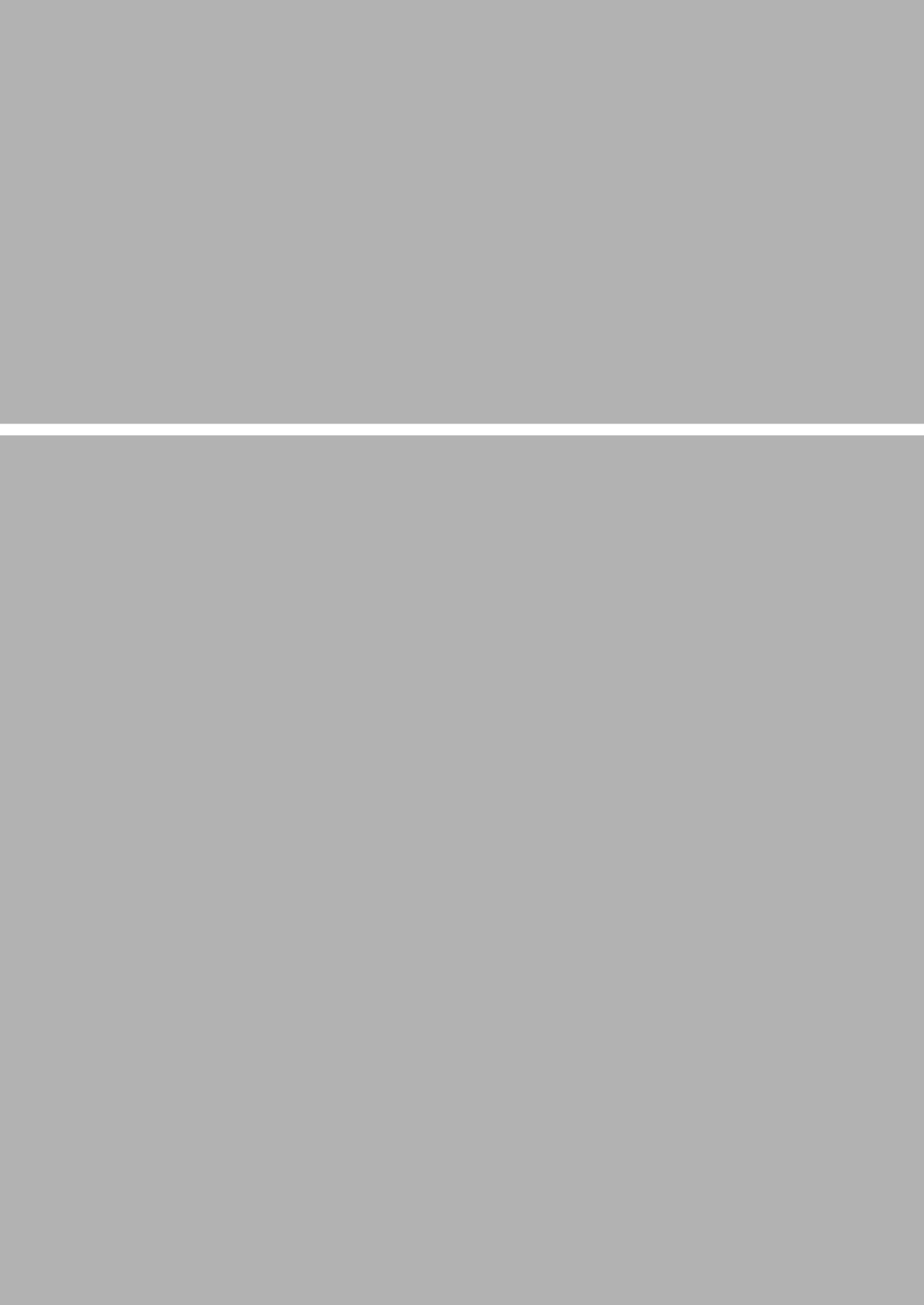
manifestations of the States watching eye. Whilst the Smart Nation does a great number of things, it is its surveillance role which is felt most acutely by the already heavily monitored Muslim community. Further, the logics of Smart Nation categorization, transform citizens into interchangeable units. This logic replicates the racialization of all Singaporeans, and particularly of the Muslim minority.

Smart Cities are reliant on the ability to turn everything into interchangeable units (Whittaker 2023, Powell 2021). If this were not possible, then the multifarious data it collects would not be computable. Therefore, these systems are reliant on clearly bounded categories. The Smart Nation, therefore, prioritizes the visible and quantifiable. With this prioritization of the visible comes the implied need to be visible, to be counted. Each of the artists presented here resists this process of racialization. Rashid interrogates Islamic identity beyond obvious visual markers, like the tudung. Iskandar questions the hierarchies created by the MUIS defined space of the walled mosque. Whilst haykal proposes ways to become encrypted, and un-tokenizable through syncretism. All these works run counter to Smart Nation ideology. Rashid, Iskandar, and haykal blur the lines of categories, introduce ambiguity to them, and blur themselves.

Centralization and bureaucratization are not new products of Singapore’s Smart Nation project. As haykal told me, “The data involved is just meant to embolden specific desires of the state”. By blurring categories artists resist their imposition by the state and its machines. Muslim women cannot be reduced to the visual symbol of the tudung. Islamic spirituality cannot be controlled centrally in the mosque. Singaporean Islamic religious practice can be complex and syncretic. Unsettling state racialization of Muslims makes these artists, and their work, hard to categorize, endangering the frictionless multi-racial governance of the Smart Nation. Blurring then does not only resist the Singaporean state, but the process of racializing Muslims in general.

Blurring offers a way to explore how people resist state categorization, by reflecting on the complexity of their own identities. In *Seeing like a State*, Scott argues that modernist schemes of legibility fail because “the progenitors of such plans regarded themselves as far smarter...than they really were and...regarded their subjects as far more stupid and incompetent than they really were” (Scott 1998, 343). This applies not only in highly technological cities like Singapore, but all neoliberal contexts

where states use simplified categories to divide and control citizens. By blurring, artists can operate within the state, perhaps even receiving its funding, whilst maintaining their critique. These are the kinds of critique which arise under authoritarian states with technologies of surveillance much more advanced than Scott described. As the use of AI technologies by states proliferate, the need to blur as an act of resistance will only increase. By considering how blurriness might be strategic it is possible to consider other ways of resisting hegemonic discourses not only in Singapore but other technocratic states.



Chapter 6

What Does the Future Sound Like?

INTRODUCTION

As this thesis has repeatedly explored, the role of AI is frequently invisibilised in Singapore. In recent years, technology has played an increasingly central role in the governance of Singapore, including the governance of the country's Muslim minority. Ethnographies behind the scenes of such digital systems like Monserrate's (2023) on American data centres show that these systems operate in messy and affective ways. For example, Monserrate shows that data centre stewards frequently listen to the servers to try and understand their needs and see themselves not as objective robots but as human caretakers. However, I often found that the subjective processes which underlie AI systems were not easily accessible in Singapore. A close friend and technology researcher has tried without success for several years to tour a data centre in Singapore. Data centres often do not appear on maps and are grey anonymous buildings with signs on their fences declaring them "protected areas." More than once, I found myself scuttling by these buildings with my microphone recording in my backpack, trying to experience these sites first-hand whilst not getting into trouble. The message is clear: do not look here.



Figure 14- Warning found outside data centers.

Likewise, I only heard about the construction of the AI Fatwa bot after the fact and so never got to witness the negotiations and choices made during its creation. When I did hear about it, I was assured that it would be for internal use at MUIS only, again reducing the opportunities to see the system in use and the interesting contradictions that would arise. What I learned about the AI Fatwa bot came to me second-hand from its designers and what they were willing to divulge later on. This is not a surprise really, given my position as an outsider and theirs as a government body. It is rare indeed that ethnographers gain access to the state, as I describe in my methods section. The consequence is that my experience of AI systems within the Singaporean State came from the polished presentations of government officials at public events.

Further, as we have seen, ChatGPT—which underlies the AI Fatwa bot—manages the data collected by the Smart Nation. It is installed in the software of civil servants, which is built on an archive of human texts that cannot be accessed. As a consequence, my interlocutors and I could only imagine the archives' content by tracing the outlines of what was present and absent in its outputs. By the time of those interactions, the AI which we experienced together was one which had already been rendered as an 'objective' output.

As Monserrate (2023) argues, all digital infrastructures are cultural objects created by subjective people, not objective systems run by robots. Throughout my fieldwork I struggled to access the human parts of AI. Often, I glimpsed AI only after it had been transduced by various state apparatus imbuing it with the ideologies and epistemologies of the state as described in Chapter 2. I use 'transduce' throughout this chapter under the definition put forth by Helmreich. His definition of 'transduce' is that it "names how sound changes as it traverses media" (Helmreich 2015, 222). Here I expand its definition to include how anything is changed when moving through a medium. In this case, how AI is changed from a cultural process into an objective outcome when passing through the Singaporean state. Consequently, I mostly experienced AI after it had been 'transduced' to have the rough edges of human involvement sanded off, just like the data which flows into AI systems and state definitions of Muslim identity. Often my interlocutors felt similarly, as we will hear in the upcoming sonic ethnography. LC an activist and writer argued that this was their experience of Singapore in general, stating, "I think that is what a lot of Singapore is like, they conceal a lot of things then make it seem nice for you to experience".

The question I faced as I re-entered the field in summer 2023 was how I might allow my interlocutors to experience the affective aspects of AI systems. How might the seemingly objective and invisible be transduced back into the subjective and sense-able? At that time, I had come across the work of the artist Christina Kubisch, who uses electromagnetic microphones to transduce a representation of the electrical soundscape. The project allowed people to experience electromagnetism, which is constantly being produced by technology, but which is not usually audible. In the sonic ethnography which follows, I attempt to do something similar.

Armed with my own electromagnetic microphone, I organised to meet with three of my interlocutors at sites they chose within Singapore that made them think of the future. These interlocutors were ones I had met on several occasions and built rapport with. They were also interlocutors who had strong visions of Singapore's future. When we met, I would set up the microphone and give them headphones so they could hear the electromagnetic waves of the area transduced into sound. Iskandar, who we already met in the chapter "Act Blur, Live Longer," took me to the two remaining locations in Singapore where the call to prayer can still be heard: Kampong Glam in the centre of the city; and Woodlands Waterfront Park, next to the causeway to Malaysia, where the Azan can be heard drifting across the water from Johor Bahru. LC, a Muslim writer and activist, met me at Marina Barrage in the heart of Singapore's central business district, a man-made park built on top of a dam which protects the city from flooding and produces electricity. Finally, Wan, an indigenous rights activist whose family lived on Ubin Island until Singaporean Urbanisation plans of the 1970s, took me to Pulau Ubin. After I had the microphones set up, we walked through the areas they had selected while I asked them to imagine the future of Singapore.

I wanted them to choose places in the city that were familiar because, as I have argued in Singapore, there is a second city. A city constructed from data extracted by the cameras and sensors which form the Smart Nation. However, it is a city that cannot be seen by walking the streets. Only its traces—a camera here and a data centre there—can be perceived. In spite of this invisibility, the future of Singapore is tied to this second city, the data it produces, and the visions that data conjures. When I interviewed people during my fieldwork, I often found myself asking "what does the future look like?" But how can Singaporeans imagine an alternative to something they cannot see? By making electronic infrastructures of Sin-

gapore's Smart Nation tangible through sound, I allowed my interlocutors to re-engage with the city they know through the one they do not (Cobusson 2022 and Heine 2023).

To be clear, what Iskandar, LC, and Wan heard during these walks were likely not the literal sounds of AI. To me this is not what is most important, as Helmreich argues "transduction affords a way into thinking about the infrastructures through which the vibrating world is nowadays apprehended" (Helmreich 2015, 226). By using my electromagnetic microphone to transduce electrical objects into sound, I aim to make them tangible and therefore elicit affective responses to them from my interlocutors, which I struggled to access in my ethnography otherwise. Similar projects have been conducted by ethnographers using sound. For example, Roosth (2009) showed how by increasing the volume of yeast molecules vibrating, participants would associate these sounds with screaming. Likewise, Espirito Santo (2019) used electromagnetic recordings taken by ghost hunters to show how they constructed the presence of ghosts within the recordings by placing significance on the transduced sounds produced by their microphones. What interests me in these recordings, therefore, is how these new interactions with AI infrastructure, transduced into sound, prompt new and unexpected reflections from Iskandar, LC, and Wan.

It might therefore be argued that these recordings do not reflect the reality of AI systems and their infrastructures. On this I agree with Ruha Benjamin when she writes that "facts, alone, will not save us" (Benjamin 2016, 2). Rather, as she goes on to argue, "fictions...are not falsehoods but refashionings through which analysts experiment with speculative methods [to] challenge ever present narratives of inevitability" (Benjamin 2016, 1). As this thesis has explored the futures of Muslims, and AI, in Singapore are narratives which seem inevitable. By creating an opportunity for my interlocutors to re-encounter the city through electromagnetically transduced sound, I aim to offer a speculative space to imagine futures outside the foreclosed ones which emerge from state narratives.

As a consequence, I try in this chapter to leave the futures described in this sonic ethnography open by trying to refrain from analysing them and shutting down their potential meanings. I prefer instead to leave them open to be transduced and speculated on. Here I hope to offer a perspective on the contents of these recordings as a guide and frame for listening to them.

Iskandar – Ghosts and Circumambulation

Iskandar and I agreed to meet at Mother Dough, a bakery in Kampong Glam. A regular haunt of mine during fieldwork. Kampong Glam, in central Singapore, had been the seat of the Malay royal family, and for many years was a meeting point for South and Southeast Asians on their way to Mecca for Hajj. These historical connections to Malay royalty and the Muslim community mean that Kampong Glam is one of the last places in Singapore where the call to prayer can be heard.

In 1974, the Singaporean state began a campaign to reduce sound pollution throughout the city (Lee 2003, 112). To comply with this new order, mosques around the island turned their speakers inwards, away from the street. The call to prayer would no longer be heard outside the walls of the mosque in Singapore. Having recently been resettled from rural kampongs to high-rise apartments in Singapore's rapidly urbanising centre, this change in the sonic landscape came as a shock to many Muslim residents. As Lee (2003) argues, up until that point, the *azan* itself had functioned as a sign of the limits of a community. It was what Schafer (1994) calls an acoustic community. If you were within earshot of that call five times a day, you could be sure that you were in a Muslim kampong. Since 1974 Sultan Mosque in Kampong Glam has been the only place where the *Azan* could be heard. A last reminder of communities past.

This conflict over sound in public space mirrored that of an earlier one in the 1830s between British colonial officers and the Chinese community, whose noisy religious processions were seen as a disruption of the peace (McCullum 2017). Attempts to end these processions was protested vigorously by the Chinese community. In fact, the furore over the change in 1974 to the *Azan* was calmed by the state pointing out that Chinese religious processions were also being curtailed (Lee 1999, 90). Regardless of who these policies affected, they profoundly changed the sonic landscape of Singapore. Where once religious and cultural sounds could be heard across the island, those noises have since been subsumed by the noise now most commonly associated with Singapore – construction. As it stands, there are only two places in Singapore where the *Azan* can regularly be heard: in front of Sultan Mosque in the traditionally Malay neighbourhood of Kampong Glam, and at the causeway to Malaysia, where the sound floats across the water from the Mosques in Johor Barhu. We began our walk and ended our walk in these sites, reminders of an acoustic community which once existed.

These haunted sites set the tone for our walk. Ghosts would return repeatedly throughout the day. The first time, we walked between two Muslim graveyards, where our discussion was interrupted as the electromagnetic microphone leapt to life. Ghosts? This moment would lead Iskandar to reflect, off microphone, on the way the constant building works in Singapore meant that even the dead could not rest. Graveyards are often relocated in the process of construction in the city. That thought came back to Iskandar as we walked through our second stop, an abandoned railway line which once connected Malaysia and Singapore before the split. There we came across a construction site. Another graveyard, Iskandar commented. Construction sites are not just on literal gravesites but are also built on top of people's memories. Memories of community, like those of Muslims removed from their kampongs in the 1970s. At our final stop over an hour away from our starting point, by the causeway to Malaysia, I asked Iskandar how we could reach a future he would want for Singapore. He replied, "Death", though he said that even in death they do not let you rest, referring to the constant construction which uproots the dead and displaces the living.

As we finished our interview on the causeway, the azan drifted across the water from Johor Bahru—a haunting reminder of the acoustic communities which once existed in Singapore, and of a time when Singapore and Malaysia were a unified country.

I am drawing here on Derrida's sense of haunting, the presence of the past and lost futures which are felt in the present. As Derrida argues, "Haunting belongs to the structure of every hegemony" (Derrida 2006, 34). In particular, the Singaporean state's insistence on 'survivalism,' which motivates its push toward a technological future, is haunted by the split with Malaysia. Since that split, as we explored in the chapter on the epistemology of AI, Malaysia has been seen as a threat and has motivated the focus of Singapore on self-reliance, including building a tech economy and strengthening its military. When we hear the Azan drifting across the causeway from Malaysia, it is a reminder of this haunting presence in Singapore. Not only because it demonstrates the physical proximity of Malaysia, but also because it is a reminder that Singapore could have been part of a Muslim majority country. It is an acoustic reminder of that community.

In his essay "*What is Hauntology?*" Mark Fisher writes that "what haunts the digital cul-de-sacs of the twenty-first century is not so much the

past as all the lost futures that the twentieth century taught us to anticipate” (Fisher 2012, 16). All the moments of haunting we experienced on our walk through Singapore were reminders. Reminders of the community that could have been. Often these reminders appear in Singapore’s architecture. Golden Mile Mall, which I described visiting in the introduction, is being renovated into luxury apartments. Its iconic façade remains, but the community who inhabited it are gone. The building then becomes a haunting reminder of what once was. Another example is the village mosques which are now demolished, only remembered through photographs posted on the Facebook page “Lost Mosques of Singapore” described in Chapter 5. Singapore is filled with memories of communities cleared away to make way for the futuristic metropolis.

However, Iskandar is not entirely pessimistic. He argues that the future does not exist. Time, in his view, is circular; we circumambulate over paths already once trodden. Instead of the linear futures proposed by techno-solutionism, in which a day will come when all our problems will be solved by technology, Iskandar proposes something else. Instead of Artificial Intelligence, he said to me that Singapore needed Ancestral Intelligence, the knowledge of those who have walked this circle before, as we encounter the problems they faced again.

As Escoffery has written “Ancestral Intelligence are collectively cultivated knowledges, locally specific, balancing our cultural differences with our ever-changing ecosystems” (Escoffery 2023, 2). This is a broad definition, referring to all human knowledge produced and encompassing everything from NFTs to social gatherings (Escoffery 2023, 9) but this is purposely so. As Escoffery argues, this multiplicity goes against the universal claims to truth made by AGI. In Singapore then, this Ancestral Intelligence may reside in the memory of spaces like Golden Mile, or the Islands “Lost Mosques.” These spaces then are not only hauntings but opportunities to re-engage with a past which has been obscured by urban development. Through this a multiplicity of Intelligences emerge and create the possibility of futures not produced by the probabilistic epistemology of AI which regurgitates the most common parts of its dataset.

What drew us to this conversation during the walk was that moment between the Muslim graveyards in Kampong Glam, where Iskandar concluded that what must have been an underground cable intervened in our conversation. It was that electromagnetic interference which drew

Iskandar's mind underground. To the buried, to the dead, and in the end to ancestors. Perhaps we could have had this conversation without electromagnetism, but I would argue that creating a space to speculate about those transduced sounds prompted connections which would otherwise have gone unexplored.

LC – The Singapore You See and the Singapore You Don't

My walk with LC was characterised by contrasts. We met at Marina Bay, a piece of reclaimed land which juts out from Singapore into the sea. Prior to land reclamation projects, which began in the early 20th century, the coast extended right up to Kampong Glam, where I had met Iskandar. As more land was built, the only reminder of Sultan Mosque's former proximity to the sea were the street names, like Beach Road, which was now a fifty-minute walk away from where LC and I stood looking out at the shipping tankers. To be precise, we were standing at Marina Barrage, a dam which produces clean water and electricity for the city. At the dam's opening in 2005, Prime Minister Lee Kuan Yew stated that the new dam would ensure a self-sufficient water supply in Singapore, which otherwise needed to be brought in from Malaysia, another haunting reminder of the nation's ties to its larger neighbour.

LC had asked to meet at Marina Barrage because it was, for her, somewhere tranquil in Singapore to sit and think. That said, as we stepped out of the MRT station, we were met by the familiar sound of construction. A reminder of Iskandar's comments that Singapore was building on the graves of someone else's memories. As we walked through the park which had been built atop the dam, LC reflected on what Singapore meant to her, and all the ways it contrasted with the Singapore that is advertised. Hers was one of community and warmth, while the mainstream aspirations of Singapore were of individualism and economic progress. She reflected on the costs of this economic progression. Both on individuals, who need money just to maintain friendships, and on the environment, which is destroyed by the constant construction in Singapore.

As if to highlight this, we stumbled into an area of electromagnetism which was perhaps the loudest I had ever seen. LC cringed at the sound coming through the headphones and showed me the microphone display which showed a waveform that filled the entire screen. Usually, even loud electromagnetic sound produces smaller waveforms which spike erratically. In this case, the waveform suggested a single unbroken wall

of sound. This is perhaps unsurprising, given that we were standing on a hydro-electric dam.

For LC in our conversation, the sound became an allegory for Singapore at large. This beatified park, which LC had thought tranquil, was just a front for the ferocious labour hiding beneath. This, she observed, was like the way things are often obfuscated in Singapore. Or, as she put it, “they make it nice for you to look at.” The future she imagined was likely a perpetuation of this trend: more environmental destruction, more speed, more building hidden by a façade of tranquillity.

By contrast, when I asked her what her ideal future would sound like, she pointed the electromagnetic microphone at a smart bin powered by a solar panel. Its low hum of activity contrasted with the roar of the dam. I am reminded by LC’s comments of Hartmut Rosa’s work on societal speed-up. Technology promises efficiency and, with it, free time. For all its technological innovation, the Ministry of Manpower in Singapore found that one third of surveyed Singaporeans experienced work-related burnout. Rosa argues that this is not a product of technologies themselves, but of the demands of capitalism, which are driven by a focus on economic growth (Rosa, 2016). This is one of the key motivators of AI futures in Singapore, where a small workforce is asked to produce more year after year. Remember that one of the motivators behind the AI Fatwa Bot was to produce religious decisions faster. LC did not propose an end to activity, but a slowing. Not silence, but something quieter. Perhaps such a future could offer Singaporeans more room to dwell in the present, to reflect on the past, and to engage with the Ancestral Intelligence proposed by Iskandar.

Wan – An Impossible Future, Returning to Ubin Island

Wan’s walk returns us to hauntings. When I asked him to do this electro-walk with me, he proposed that I join one of his monthly clean-up projects on Ubin Island. Since 2018, Wan has run “Wan’s Ubin Journal,” a blog which aims to keep alive the cultural heritage of the Orang Pulau, a Muslim community indigenous to Singapore’s Islands. Wan’s mother grew up on Ubin island. East of Singapore’s mainland Ubin Island is one of several islands surrounding Singapore which were the homes of the indigenous Orang Pulau populations. From the 1960s onwards, these Island residents were resettled into new urban developments. This included Wan’s mother and grandparents. Today less than 40 people live on Ubin Island permanently. Otherwise, it is a leisure space for urbanites

searching for a reprieve from the noise and bustle of the city, another recreational area like Marina Barrage.

I first met Wan on a tour he organised for Ubin Day 2023. We stayed connected, and he invited me to join him and a group of students who were heading to the Island to clean the last remaining village on the Island, Kampong durian. For the students it was an opportunity to reconnect with their heritage.

The only way over to the Island is via ‘bum boat’ from Changi village. These old boats hold 12 passengers and only leave when they fill with that many. Their old engines sputter to life and struggle against the water, revving over and over. I sit with Wan and ten excited members of a Malay student association. Though they have lived in Singapore all their lives, for many of them, this will be their first day on Ubin. It takes us around half an hour to arrive at Kampong Durian, and as we go Wan quizzes them on the names of plants. They struggle, and I am not much help either. When we get to the Kampong, they set up a net on the grass for Capteh, a traditional Malay game where you kick a shuttlecock back and forth. I am drafted in but my team quickly loses, and it begins to rain. I record the game from the relatively dry tree line.

Capteh champion crowned, we get to raking leaves for the rest of the afternoon. Just as we finish the rain stops, and as the students leave, I set up microphones. Sat at a plastic table Wan listens to the electromagnetic audio coming off his phone. He laughs in surprise and then again when I ask if he wants to search the area for more electromagnetism. “It’s very likely you will not [hear electrical activity]”. Wan commented. I left the microphone running anyway, but later listening proved Wan right, silence.

Wan is not concerned with technological futures. Instead, he dreams of a day when Orang Pulau like his mother can return to Ubin, this time to stay. The first time we met he told me about intertidal foraging practices of the Orang Pulau. Nowadays, foraging is increasingly illegal both on Ubin and on the mainland. He told me that he wishes he could teach the groups he tours around Ubin how to forage, but that is no longer allowed. He tells me that there is a difference between learning about heritage in a book and being able to experience it. The difference between learning the name of intertidal creatures which can be foraged and knowing how to notice their traces in order to find them.

As we walk through the remains of the Orang Pulau community on Ubin, Wan reminisces about the sounds that accompanied that community. Every year more members of the dwindling community leave the island for good as a result of ground rents rising. At the same time, much of the Island becomes foreclosed. A large part of the mangroves, once central to the Orang Pulau community, are now fenced off to become the OCBC (Overseas Chinese Banking Corporation) Mangrove Park. A project which aims to restore the area, a job the Orang Pulau once did as part of their life on the Island.

When Wan first returned to Ubin Island, his mother took him to the area where their family's home once was, but she could not find it. She searched through the mangroves but could find no trace of where the building once stood. Years later Wan returned to try and find the house. After weeks of searching, he came across what remained, a concrete foundation and a small piece of rug. It is no longer possible to reach the site of the house, as it is in a part of the Mangroves fenced off for the OCBC conservation area.

My first time on Ubin Island I joined a tour for Ubin Day, a celebration started by Wan to preserve Orang Pulau culture. The tour ended at a path by the water, where the Indian Ocean and South China Sea mingle. As I joined the congregation around Wan, I heard waves washing across the beach. By the path was a clearing in the trees. There, peeking from the leaf litter, were the posts of Muslim graves, some tied with yellow cloth. Wan pointed to the spot where the island's mosque had once stood. Stood in the absence of a mosque, we watched Wan perform the call to prayer for a community that no longer existed. As he finished the Azan, he began to cry.

Like many of the places I went with Iskandar, walking through Ubin Island with Wan makes me acutely aware of how it is haunted. Standing at the site of the mosque, or near where Wan's family home once stood, or even in Kampong Durian I am reminded of Law's words on absent presence: "what is being made present always depends on what is also being made absent" (Law 2004, 83). The Island is haunted by the absence of the Orang Pulau, and the traces of community they left behind. It is haunted by a future which did not come to be. Where the Orang Pulau were able to stay on the Island and conserve its nature. The future Wan described to me on Ubin reminds me of Iskandar's Ancestral Intelligence,

a future which circles back to the past and its knowledge. It is a kind of knowledge which is slowly being made absent on Ubin.

In this section of the sonic ethnography, we do not hear any electro-magnetism which reflects the recordings I made. It stands in contrast to the sections preceding this one where the electrical sound makes regular interruptions. This remains the case until the very end, when my recording of Wan's Azan at the former Mosque site is interrupted by electromagnetic sound. This recording was made in an industrial area of Singapore, and I edited it into this section of the audio to end on a question to the listener: How long before electronic waves can be heard around the Island?

Formal Choices: Sonic Ethnography and Zine

The sonic ethnography which follows is composed of three parts. The first is my interview with Iskandar and includes three locations: Kampong Glam, the abandoned railway line on Upper Timah Road, and Woodlands Waterfront Park overlooking the causeway between Singapore and Malaysia. A journey which took us over half a day to complete in real time. This is followed by my conversation with LC at Marina Barrage on a day so hot we could only bear to be outside for just over an hour. Finally, we hear from Wan on Ubin Island, a trip that was part of a wider effort to clean the Island which he conducts monthly. Each of these three sections are separated by a poem written by Iskandar about the future of Singapore.

This sound work is accompanied by a zine which includes the transcript of these three conversations. There is a QR code which grants access to the sound file and instructions on when to press play. Within the zine each of the interviewees is represented by a colour from the additive colour model RGB (Red, Green, Blue). This is a colour model designed to produce a range of colours by combining these three base colours, which when combined equally produce white. This system is used primarily on screens and computer monitors. Iskandar is red, LC is green and Wan is blue. Taken together, as with the three colours of RGB, their three views on the future combine to give us the whole picture. However, the RGB colour model is device dependent, meaning that different screens interpret the colour values differently. Likewise, listeners and readers may interpret these three visions of the future differently. The views of LC, Wan, and Iskandar then represent a partial composite vision of Singapore's future for the Muslim community. The zine and sound can be

experienced separately but were designed to be experienced simultaneously so that the listener/reader can follow all of the dialogue and have a sense of space.

I included this zine so that these elements can be easily followed but the focus remains on the sonic parts, not the visuals. The dialogue and spatial elements of this work can at times be challenging to follow because I allowed the electromagnetic sound to at times overwhelm and subsume the dialogue. I decided to edit in this way for two reasons.

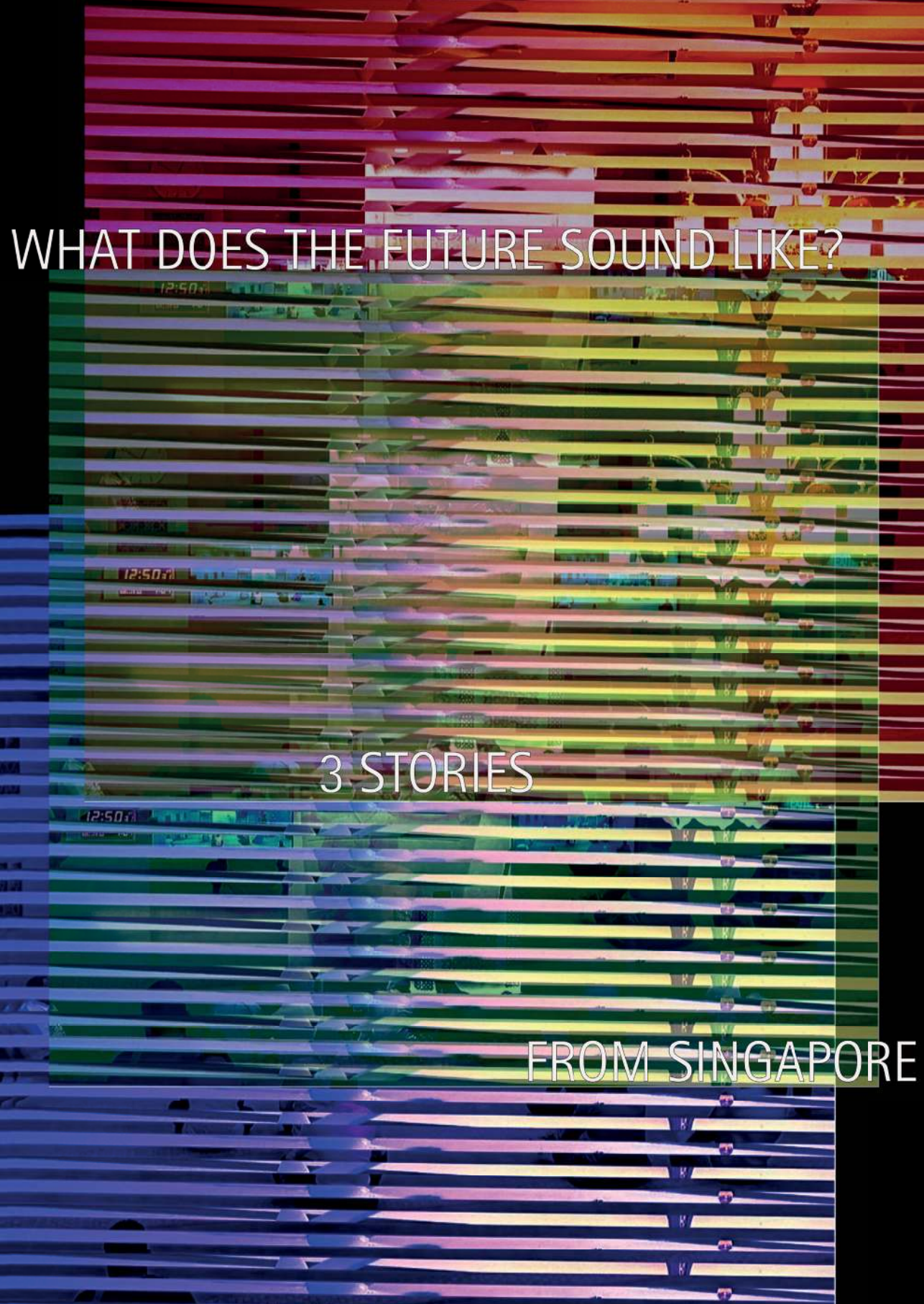
First, as Willerslev and Suhr argue, “strange things happen when two elements are brought together in montage...we see in the juxtaposition of montage components the opening of a gap or fissure through which the invisible emerges” (Willerslev and Suhr 2013, 2). As I have already argued in this chapter, the role of this sonic methodology was to make the usually invisibilised infrastructures of AI tangible and seeing what emotions this raised in my interlocutors. By editing in ways that are sometimes distracting and overwhelming I aim for this juxtaposition to likewise raise emotions in the listener. Do these sounds cause annoyance or irritation? What does it mean that such electrical activities surround us, just below our ability to sense them?

Secondly, I wanted to represent the experience of these recording sessions. Whilst Iskandar, LC, and Wan and I spoke, our conversation would regularly be interrupted by the sounds of electromagnetism. I wanted to replicate the sensory experience of these moments in a way similar to the work of Charette, Lima, and Elliot’s (2022), who reconstructed the sonic experiences of people with serious head injuries. My goal, therefore, was not to create a naturalistic representation of the sounds as recorded, but to edit in a manner that evoked the experience of encountering electromagnetism produced by technological infrastructures. In this way, my editing approach derives from the ideas of visual anthropologists who resisted the naturalistic ‘research films’ of the 1970s, and 1980s (Postma 2021), and their “assumption of life being an uninterrupted process and therefore the longer [the shot] the truer” (Crawford 1992, 79). Instead of trying to replicate the “real” experience by limiting editing, I approached montage as a way to evoke the subjective experiences of my interlocutors. That said, whenever my interlocutors comment on an electromagnetic sound, the listener hears what they were hearing in that moment. I make this concession to naturalism on the basis that hearing the same thing as my interlocutors lends itself to replicating their experiences.

The most notable editing intervention comes at the end of the ethnography. Wan's Azan actually came from a tour he did a year earlier on Ubin Island with a group of people visiting for the annual Ubin Day. Further, the electromagnetic sound edited into this section comes from a recording taken in an industrial area of Singapore's heartlands near Little India. I made this intervention again for two reasons. First, by including Wan's Azan at the absence of the former Mosque on Ubin Island, this moment mirrors the drifting of the Azan across from Malaysia which closes Iskandar's section. In both moments, we are reminded of the ghosts of former acoustic communities (Schafer 1994) and with them their abandoned futures. Second, in contrast to the sections preceding it, Wan's interview contains no electromagnetism, as none was detected on Ubin outside of our smart phones. However, as we contemplate the absence of one acoustic future during Wan's Azan I wanted to provoke the listener to consider another possible future. How long until Singapore's electromagnetic soundscape can be heard on Ubin? Such a future is not so unimaginable. Similar changes have happened to other Islands which used to be inhabited by indigenous groups. For example, Sentosa, formerly called Pulau Blakang Mati, is now a resort home to an aquarium and Universal Studios. I want to leave the listener with a question: what does Ubin's future sound like?

Backup link: <https://tinyurl.com/bd4hezkh>.

Password: Future1



WHAT DOES THE FUTURE SOUND LIKE?

3 STORIES

FROM SINGAPORE

Scan me!



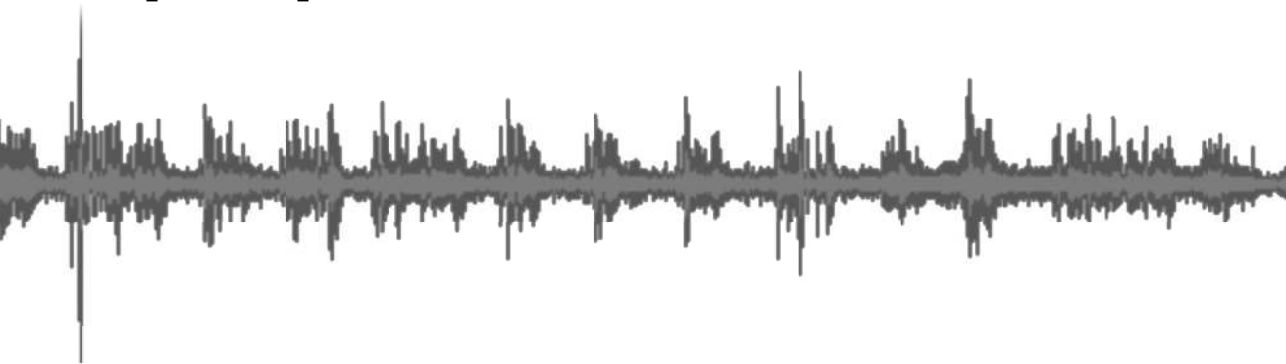
Password - Future1

Press Play

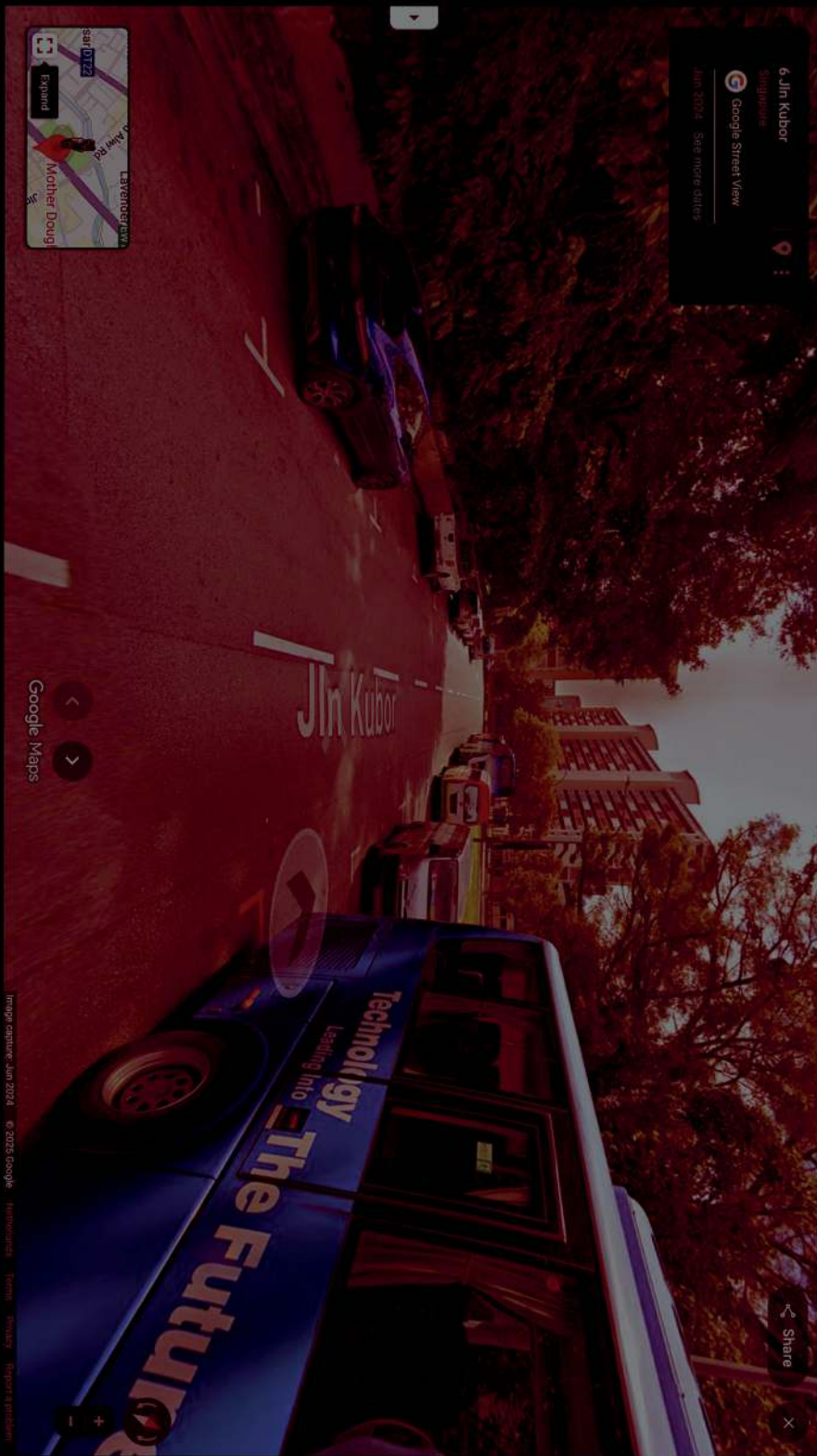
[00:05]

To imagine the future
Is to sleep with the ghosts
Of lovers past hauntings
In ancient languages
Stains and indelible wounds
On tables across warongs [family
restaurant]
Your grandmother's kain [fabric]
Tongues that speak of God
As an embrace, a house of one,
without colonial baggage and reclaimed
recluse
Now minarets high.

[00:39]



[ISKANDAR]



[KAMPONG GLAM]

[00:49]

JM: Going.

I: All right.

JM: Let me just, just talk a little bit so I can...

I: Hello, testing, 1, 2, 3. Recording 1, 2, 3.

JM: You are very quiet.

I: I'm very quiet?

JM: Yeah.

I: But, is that because I think I'm not speaking in my normal voice. Or am I speaking normally to you right now.

JM: Still low.

I: I don't think I should raise my voice to you right now. Testing 1, 2, 3 to you right now.

JM: One more.

I: Testing 1,2,3.

JM: Go loud.

I: [loudly] Hello!

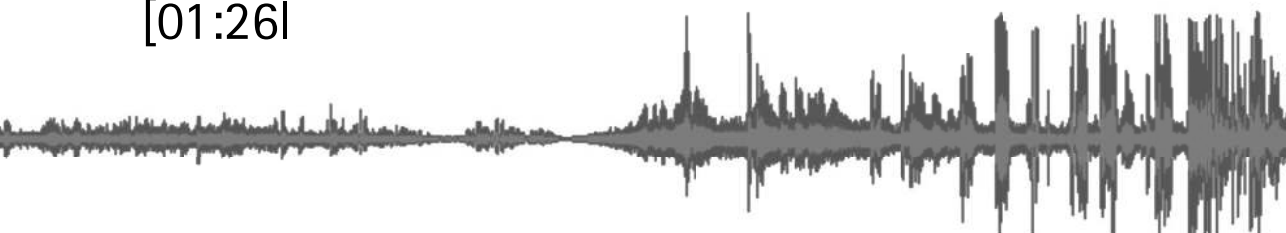
JM: Okay good.

I: But I don't want to speak in a loud manner, so just normal volume?

JM: Yeah normal is fine, I was just checking if the loud is too loud. You know?

I: Okay.

[01:26]



[BETWEEN TWO MUSLIM GRAVEYARDS, KAMPONG GLAM]



[01:36] I: It's picking up something here. Something loud here. Yeah, I'm like a ghost! You know, like there is a spirit here. Yeah, this entire road. This line. There are these very loud disturbances, why? [01:50]

[02:01] I: Because Singapore is all this networks of wires, systems underground it is quite interesting because then it links you to the buried. [02:11]

[02:33]

I: But isn't it funny because the transition between sound and no sound, is very abrupt. There isn't like a gradual lingering. There is something very shrill - here. What is happening here? It is very high pitched. And it stopped. Is it another underground thing also? Could it be?

JM: Could be.

I: It can't be the sky right? Well it's gone.

JM: It's gone it's not there anymore?

I: Oh here, yeah it is here.

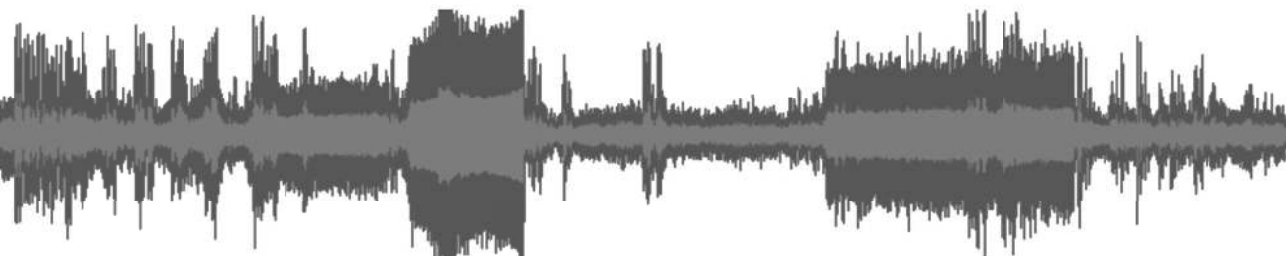
JM: Maybe it's something in that building.

I: It's that far? This is a scary device.

JM: Why is it scary?

I: It can detect - suspicious activity. Yeah it stopped. So it is from somewhere there. Hmm interesting.

[03:27]



[03:33]

[BOARDING THE BUS AT QUEEN'S
STREET BUS TERMINAL TOWARDS
THE CAUSEWAY BETWEEN
SINGAPORE AND MALAYSIA]

[03:55]



[04:00]



[04:10] I: I actually didn't want to come here. So, it is quite a last-minute thing. But it makes sense, think since we are talking about the idea of kismet [fate] and sometimes the road, where just now the sound catches on you. As how spaces latch on you. When I was looking at the bus journey of 170 from Queen Street terminal where we are from, to Woodlands, which is going to be a very long journey in its entirety. Then I thought, there is one stop which is going to be the rail mall, and I remembered this part of Singapore which is also abandoned right?

[04:46] It's funny right because train tracks are something which is networks above ground. Overground. And it is something which you straight away know is taking you somewhere, there is a destination. There is arriving and departing. But we don't see that much often about what is underground, but they are also carriages in that sense. [05:07]



[05:32]

I: It reminds me of, I don't know what to make of it, I think it points to this idea of human dependency to object signifiers. Because a train on the tracks, it really shows us there is a certainty to a passage, right? There is a kind of a promised destination in that sense.

I: I'm taking it in a more spiritual way, that we are grasping all these necessary suggestions which are in the form of steel and tracks, or even in the most benign just sort of jungle markings. But when it comes to the intangible, I think that is where we become more suspicious of things. Or rather we become so, maybe afraid, I don't know, intimidated by things that are less given. Maybe the Singapore experience has pronounced that.

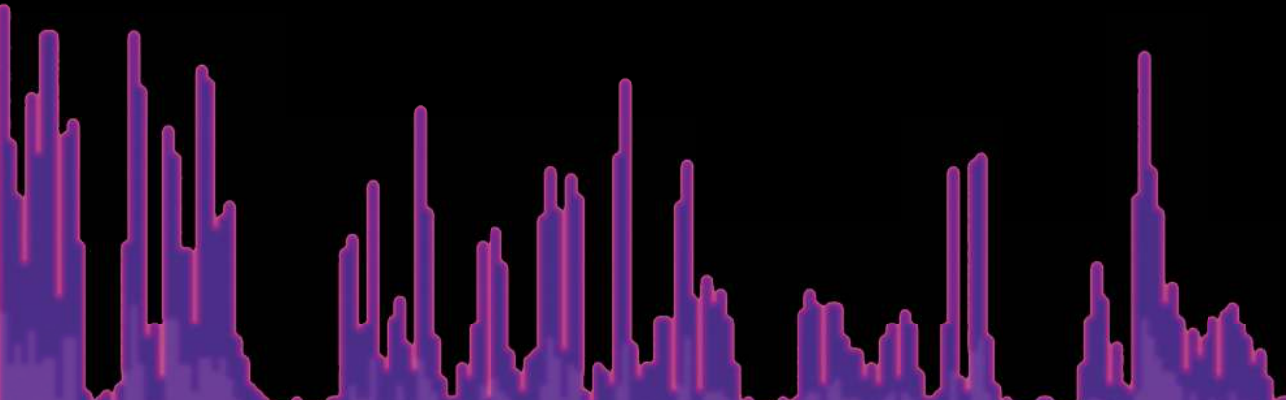
[06:30]



[07:06]

I: I think that idea that we are so reliant, on these systems which have been etched across our beings in Singapore, somehow. It is very interesting to me.

[07:19]



[07:35]

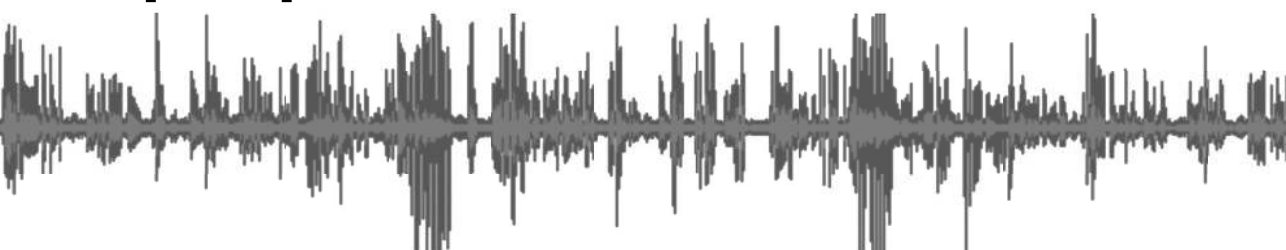
I: Tomorrow we are going to start on a new month called Dhul Hijjah. Which is essentially meaning to travel, to migrate actually. This idea of migration, right? Hajj is this idea of migration, it is not necessarily physical, but it is also a spiritual migration.

[07:51]

[07:53]

I: To me this is all aligning together because this June on the 19th of June I will be part of that season. And it is like is this going back? And there seems to be nothing wrong with going back because I keep thinking what I am doing is reclaiming parts of my history right? I'm meeting with friends from high school, from College years and I'm meeting my professor from NTU. It's like you are going to attend to things you have set aside and to me that is the future. So, it is almost like a future nostalgia.

[08:23]



[08:29]

I: But for this current trip it does feel like a pilgrimage. And pilgrimage is funny because later we are going to read the poem, and one of the words is circumambulation, right? There is no end and beginning in that kind of circle.

[08:43]

[08:44]

I: The circularity of future, so to me maybe the idea of future does not even exist. Because it feels like the future is now.

[08:51]



[09:05]

[WALKING PAST A CONSTRUCTION SITE]

[09:10]

[09:13]

I: But hey we are walking past a graveyard also.

JM: Oh yeah?

I: Not in that sense, but if you think about it Singapore is just building things on top of all these dreamings of someone else's habitat and memories and I think every construction in Singapore is a deathbed of something else. And it's not just once I'm pretty sure there are so many layers of it.

[09:39]



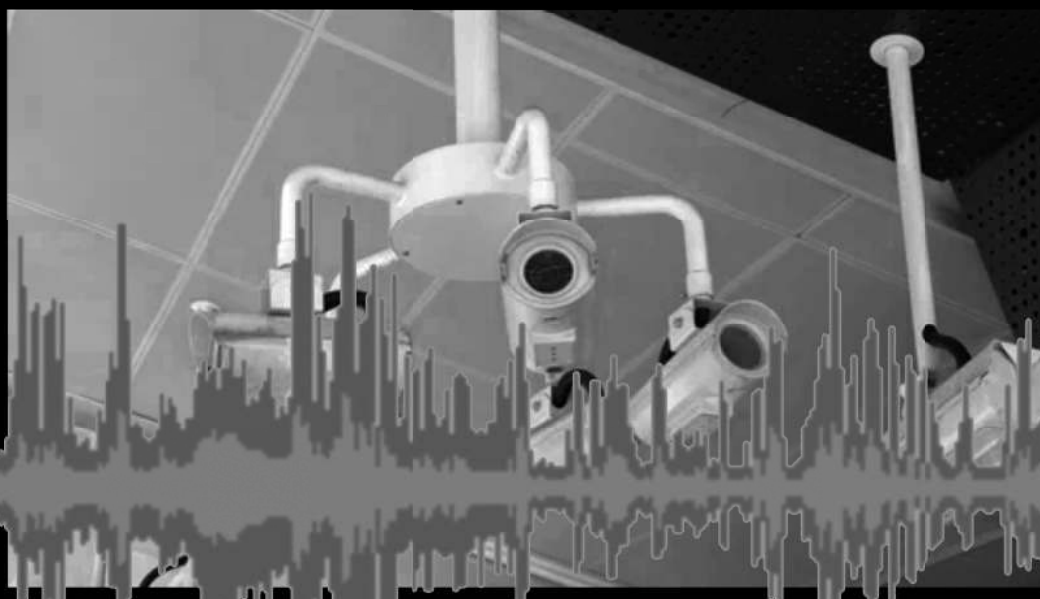
[09:53] I: Now I become shy, the civilised human beings. You wanna?

JM: Stop there?

I: Yeah, I think we better not come here. We better go there. Because I saw the ten CCTVs. This is very – You see how the body becomes very reflexive of this?

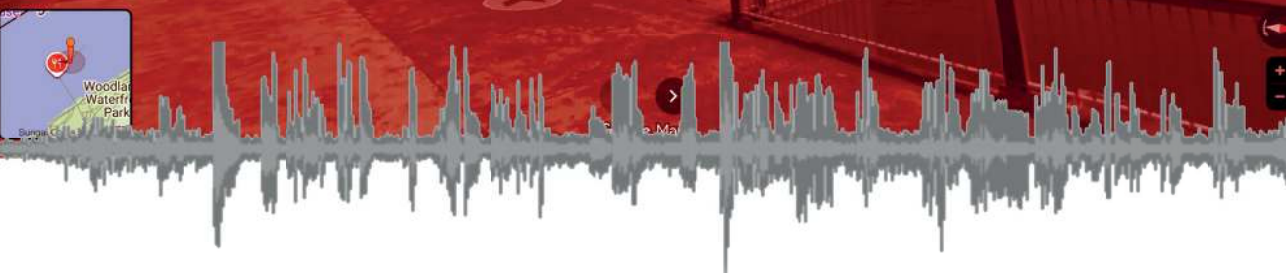
JM: Yeah.

I: Because MRTs are known to be very surveilled.
[10:12]



[WOODLANDS WATERFRONT PARK,
OVERLOOKING THE CAUSEWAY TO
MALAYSIA]

[10:30]



I: Final stop. Where are we? I don't know the exact name of this. Probably it's like a pier right? But essentially, we are within the Woodlands Waterfront park. And we are overlooking Johor Bahru. Johor Bahru is actually just a very tiny strip. The Southern most strip of Johor which is the bigger region.

And if you look to the left, you would see what I would call the spines of two separated lovers.

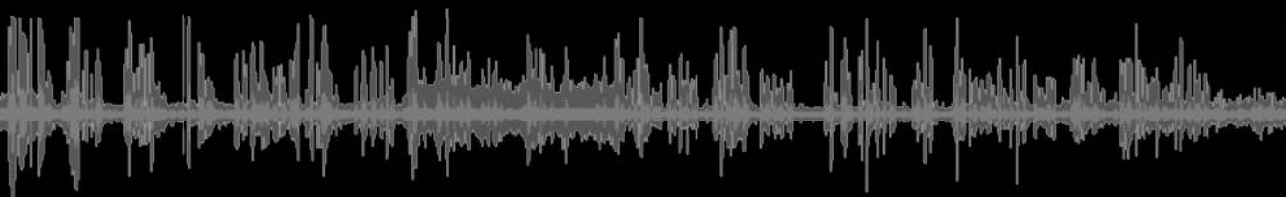
[11:05]

[11:14]

I: I think it is funny when you said stillness right? I think a lot of people's future, relies on this idea of robustness. Active energy. Things over pouring, but I think future for me, or maybe the kind of future I imagine is one filled with tranquillity.

I think I experienced that particularly here, two years ago. And that was at the break of dusk, and it was so tranquil. I think at that time only like less than five of us were here. And it was darker, by the time I reached here it was maybe twenty minutes from now. And the lights were filling. At that point we couldn't cross border. And there were some boats. So what really hit me is there was a boat comes quite close to the international water and they were waving at a guy over here. And these were the track workers who had not managed to cross back but their family is still there.

[12:07]



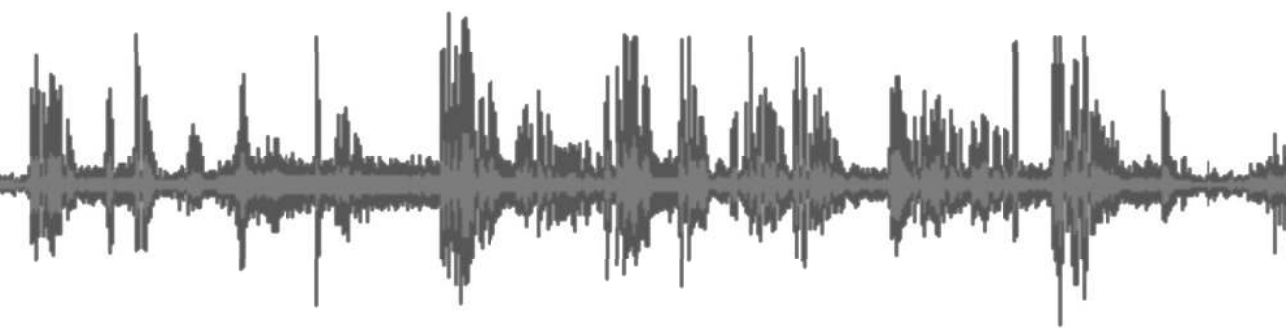
[12:25]

I: Singapore's future will always be towards hyper Urbanisation.

JM: Why do you think that is such a likely outcome?

I: Because the people within her are going to be the same kind of people. Generational muscle memory of the country is going to be the same, the reflexes are going to be the same. The way we intervene. The way we respond. The way we kind of retract. Is going to be the same, at least for a few generations.

[12:58]



[13:09]

JM: What would need to happen for the future you are hoping for, this one of tranquillity, what would need to happen for it to come into being?

I: Death. But as we realise it, it doesn't right? Even they disturb you, even in death.

No but maybe I think death in a lot of sense. Not just death in the sense, I think there is a lot of death which in a sense I want it to rebirth, different ways of living. Death in terms of the way we run systems. Death in terms of the way we perceive ways of life. I think what we need is that kind of rebirthing of new methods.

[13:55]



[AS WE STOPPED TALKING THE SOUND OF
THE CALL TO PRAYER DRIFTED ACROSS THE
WATER FROM MALAYSIA.]

[15:03]

I: They are doing the pre-prayers.

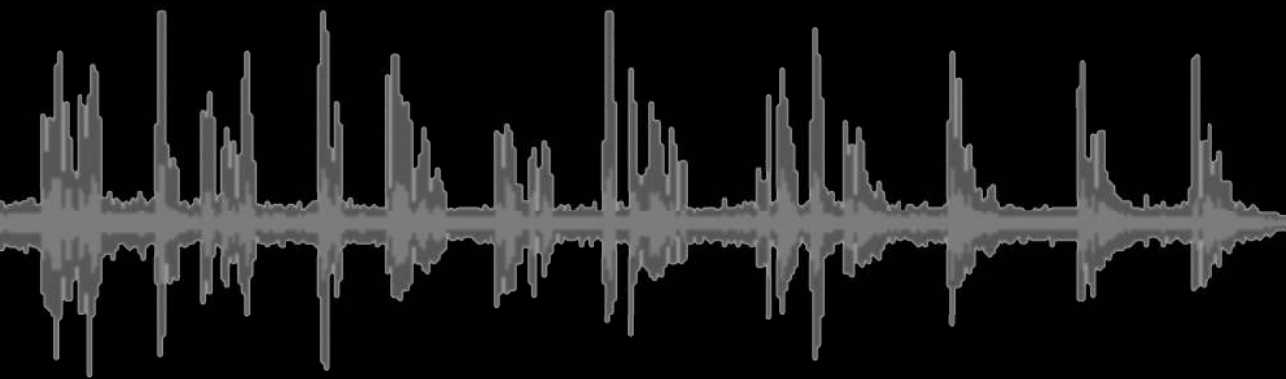
[15:27]



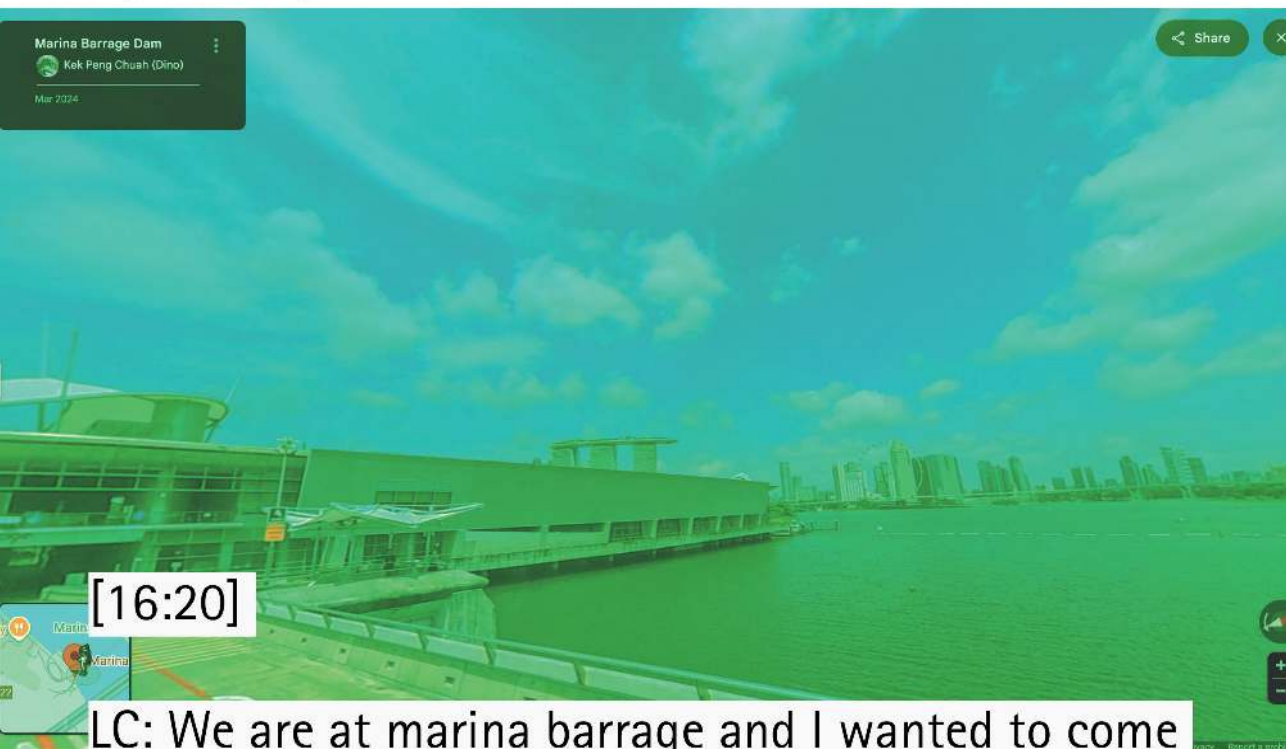
[15:32]

I: An imagined future
Rests on the feet of the earth,
grounded as a way of nadi, channels
in the body]
tree's rooted, wrapped in sarong batik
Zikir [prayer through repeated recitation]
lost in a dance, remembrance
In trance, kaki membumu. [Feet
grounded]

[15:58]



[Marina Barrage, is a park on the tip of Marina Bay. Marina Bay is a reclaimed piece of land containing Singapore's most famous tourist attractions gardens by the bay]



LC: We are at marina barrage and I wanted to come here because it's in what is considered the heart of Singapore which is Marina Bay, but it is far removed enough for me to be able to see the open sky, to see the sea, which is not very common in Singapore because we have a lot of skyscrapers. So, it is a place that allows me to slow down and reflect on the past, the present, and the future.

[16:54]



[17:01]

LC: The Singapore that is presented is very different from how I experience Singapore. National day is the country's biggest spectacle. It's where everyone comes together and everyone kind of forgets everything else. Suddenly, Singapore seems to be problem-less. But no, it doesn't become problem-less for me.

[17:32]

[linger by The Cranberries plays on a man's Speaker as he cycles past.]



[18:02]

JM: So, you said it presents one kind of Singapore not the Singapore you experience. What is the Singapore you experience?

LC: What is the Singapore I experience?
It feels a lot more organic, it feels warmer, but I think that is because we acknowledge or we embrace imperfections, whereas the Singapore which is presented outwardly is portrayed as very perfect.
That is the biggest disconnect I feel.

[18:34]



[18:54]

LC: Hmm, what do I? A Singapore that is authentic, citizens that think for themselves. What I mean by that is because we are, we are a society that has very strict ideals in a sense and most people follow and work towards that ideal life. Yeah. So, I would want to imagine a Singapore where we are freer to think about and decide how we want to live our lives.

[19:31]



[We are walking by some large columns which appear to be holding up the multi storey carpark which is below the park]



[19:39]

Google Maps

Image capture: Dec 2017 Images may be subject to copyright Netherlands Terms Privacy Report a problem

LC: Woah I don't know what's going on.

JM: There is something here?

LC: Yeah. Look. Ahh – look at it, it's very loud.

JM: [unintelligible]

LC: No, it's louder like argh – there is a sharp sound up here but – it gets lower here, but it's louder here. Somewhere here. Ahh – okay, I think so. [laughing] I think you should turn it down. It's pretty loud.

[20:27]

[20:47]

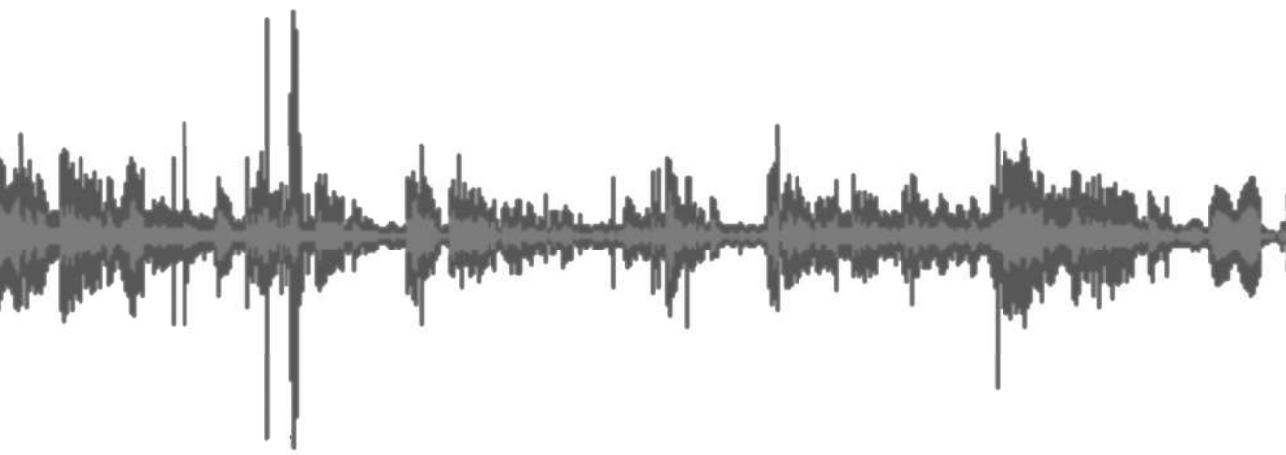
LC: Do you know what the marina barrage is?

JM: Nope.

LC: So, there is a lot of water tanks here because this is where they hold the water, they recycle and treat the water, so it might be because that is here, because the treatment is below here. But interesting because usually I come here to have some quiet time, but it is oh my god so loud here.

[21:11]





[21:36]

LC: Hmm most likely. I feel like since you talked about AI, I feel like it will continue to infiltrate all parts of our lives. We will continue to destroy more of our environment to build new things, that is a constant.

Yeah, but to me that is the most likely future. I feel like automation will be very common in the future in the sense I feel like it will be so normalised that we will lose our humanity.

[22:24]

[22:42]

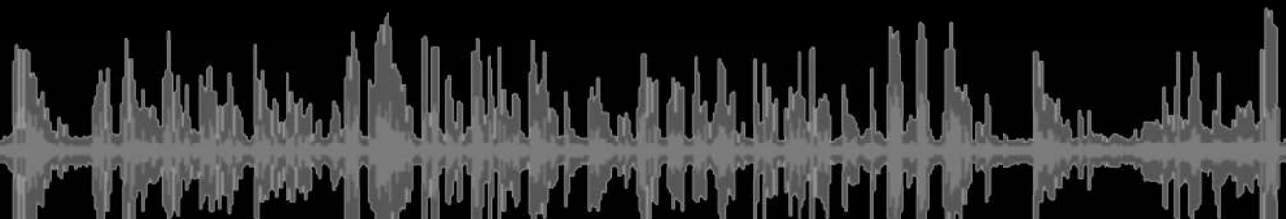
LC: the future I imagine will happen? Mostly because I am in activist circles where there is a lot more courage to speak up for what is wrong what is right. What is best for our future. So in that sense I am hopeful, but I can't stop thinking about this, that there are two scenarios, similar to how I see things. There's the community part and the national agenda, I guess.

So, I am more hopeful when I think about the community and what will develop but if I think about the national agenda, I think it will still be the same trajectory of more building more destroying nature, yeah. Yeah, more control over citizens... Okay good it's pretty quiet here.

JM: We've reached the quiet.

LC: [laughing] yeah.

[23:46]



[23:54]

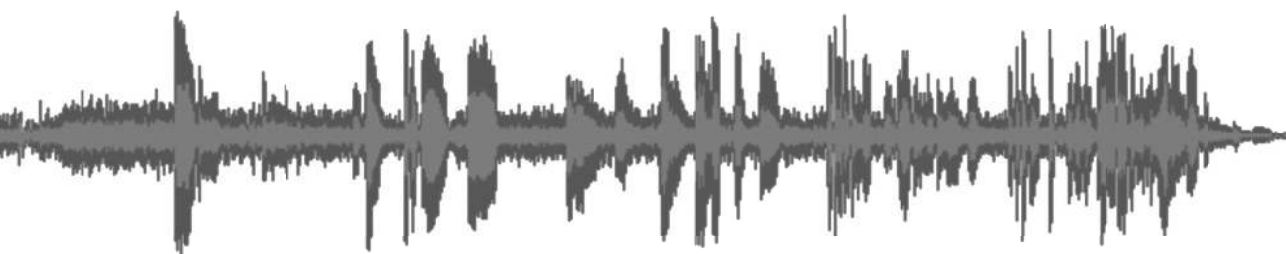
JM: We often talk about the future, and we say what does the future look like. So, I wanted to ask people, in the future you hope for, what does it sound like?

LC: It would sound like this...[holds the electromagnetic microphone up to a bin which has a solar panel on top.] I want it to sound like this

JM: like beep beep beep?

LC: No, it is just a very low bzzz, okay not low, as in it is soft, the important part is it is soft and a constant humming, compared to what we heard downstairs I think that is a lot more common in Singapore.

[24:40]



[23:54]

LC: I think I will be reminded of the buzzing next time I come here.

JM: Oh I'm sorry I hope it hasn't changed...

LC: No all good - actually that's like how I see Singapore, what you see and what you don't see. So...

I think I'm glad I saw what I don't usually see.

JM: What do you mean by that what you see and what you don't see?

LC: Because I come here thinking that I'm away from the tech and all the noise and all the crowd, and all the busyness, but actually there is a lot of activity below - yeah.

[25:37]





[25:44]

So yeah, I think that is what a lot of Singapore is like, they conceal a lot of things then make it seem nice for you to experience.

[25:55]



[26:44]

An imagined future,
Is mapped across archipelagos
And new nations without borders
Crossings and hijrah [Migration]
Where one circumambulates
In intentional daze
Between data and dreams
Falling awake and never asleep
And finally –an imagined future.

[26:44]

[WAN]

[26:45]

[We hear the boat engine revving as I take the trip over to Ubin Island where I will meet my interlocutor Wan. Wan's parents grew up on Ubin Island, which was for many years the home of the indigenous Orang Pulau. [Island people] He now offers heritage tours of the Island. The only way to reach Ubin Island is via very loud bum boat from Changi point ferry terminal.]

[27:47]

[UBIN ISLAND]



[27:50]

[On this day, I am joining a group of university students who are members of a Malay society. They tell me that the trip is an opportunity to reconnect with Malay heritage. Before Wan's heritage tour begins they set up a Capteh tournament. Capteh is a game where you kick a shuttlecock back and forth across a net. I am recruited onto a team and promptly lose. I retreated to the tree line and began to record as the game unfolded, and rain began to fall.

[29:17]



[29:21]

W: Ohh wow okay, that's so interesting as soon as it has to load something new, as soon as you enter an app it will just be loud and then when it has to load an image it just gets louder, yes, it is peaking so that is interesting.

JM: Cool, are you happy or would you like to walk around and see if you can find anything on Ubin?

W: There is a high chance you won't.

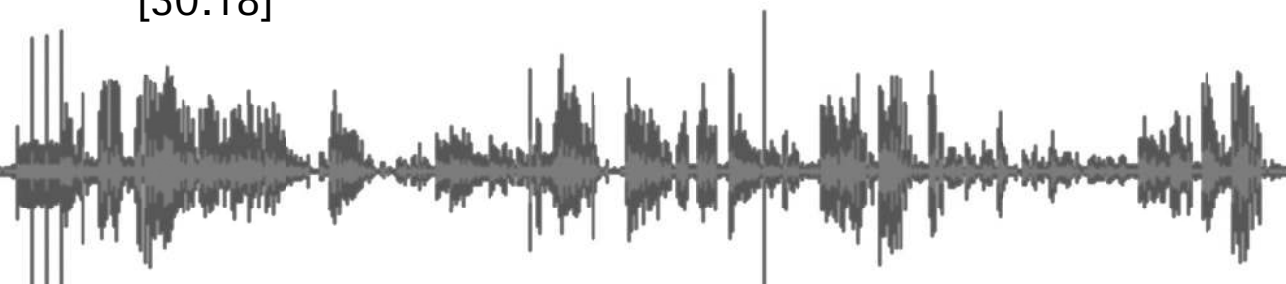
JM: Also I will send you the raw files so you can kind of see, maybe we come across something unexpected.

W: Hopefully, something electronic and not supernatural.

JM: I did walk between two Muslim grave sites in Kampong glam and we heard something underneath the road between them, but we think it was an underground cable.

[laughing]

[30:18]

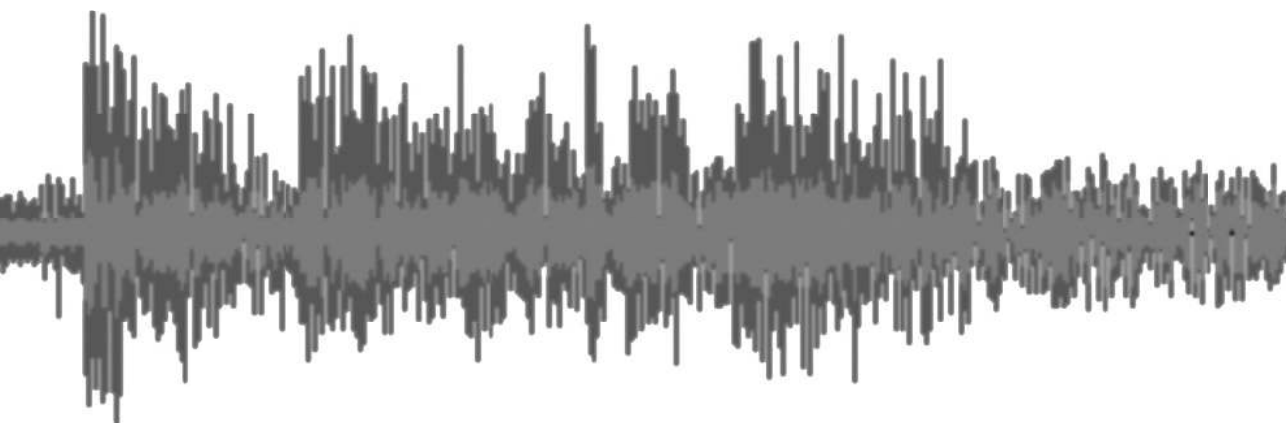


[30:42]

W: Well right now we are on Pulau Ubin specifically at the point of this recording we are in Kampong Sungai Durian, but I want to bring you down to this hut right now called Kelichap hut because over there is where my first, my first memory of Pulau Ubin was formed, in that area.

[30:59]





[31:15]

W: Well, strangely enough when I think about Ubin I think about my past first and the things that I am doing now in the present in terms of my advocacy, in terms of bringing people down on the tours so that they are able to learn this undocumented side of Pulau Ubin especially for the Orang Pulau community.

[31:32]



[31:43]

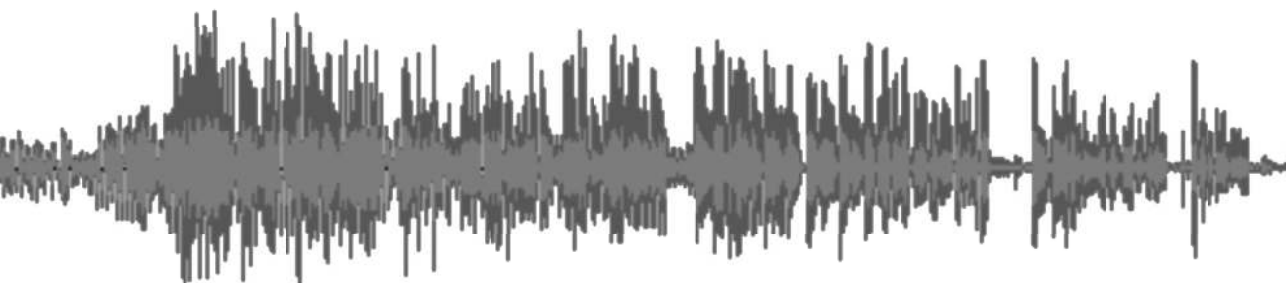
W: Whatever happens in life it is always important for us as Malays to remember our roots because we did not grow up in skyscrapers we have always grown up in nature and there is such importance for us to be together with nature.

[31:58]

[32:06]

W: I think in general in Singapore we have progressed quite a lot, we have modernised to the extent that we tend to forget our humble roots as a kampong, as village, as villagers all around the island. So for all of these islands, when all of the Orang Pulau and Orang Laut communities when they were told to resettle in another sense their culture has been uprooted from those islands.

[32:33]



[32:43]

W: I wish the future of where we are right now is the same as we've heard in the past but I do wish to tweak that a little bit to say that for it to remain the same that would mean that we are having to be fine with the fact that our Kampongs are not really given that much recognition we have to be fine with Kampongs being seen or labelled as disease ridden haphazardous [sic] slums.

So these are labels I am not comfortable with moving forward to the future because there has always been an apparent need for narratives to always describe our Kampongs as a third world feature and they say for Singapore to achieve this status as a first world country we need to get rid of all these features that remind us of our past.

[33:30]





[33:33]

[ABANDONED KAMPONG HOUSE, UBIN]

W: My impossible future is the descendants of Ubin, they return back. When the government actually does something, and they invite the descendants to come back, to allow us to return to our grandparent's houses, you allow us to rebuild those houses, and you allow us to stay. Yeah, so my argument is instead of a learned heritage, we need to take certain steps to turn that learned heritage into a lived one.

[33:58]

[34:05]

W: I think moving forward even if we develop our AI - so far based on what I could glimpse of this the involvement of the Orang Pulau is still quite important in terms of how do we document our history, how we document our heritage because when it comes to talking about the community, talking about the culture, we are poorly documented.

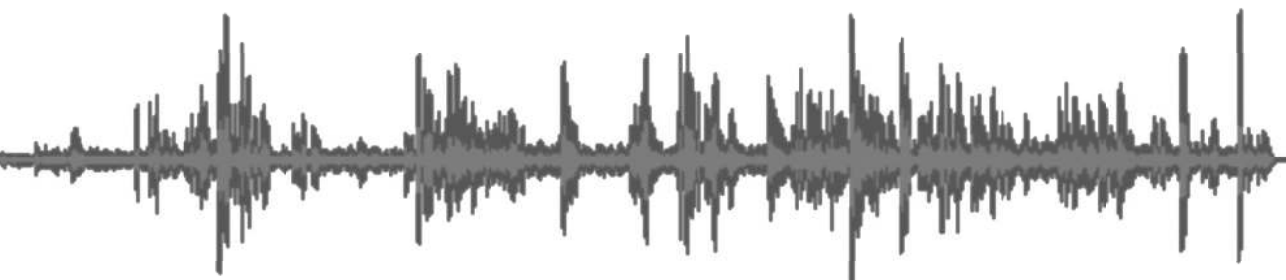
[34:27]



[34:40]

JM: Thank you so much. Yeah, that is everything, I think. Thank you, this is the third time we have met and my second time on Ubin with you and I think it is always, I think moving. At the end of the tour last time, you took us to where the Mosque used to stand, and you did the Azan and you said it was the first time in 20 years that it had been heard on this Island and it was very moving, so thank you for sharing.

[35:10]





[35:11]

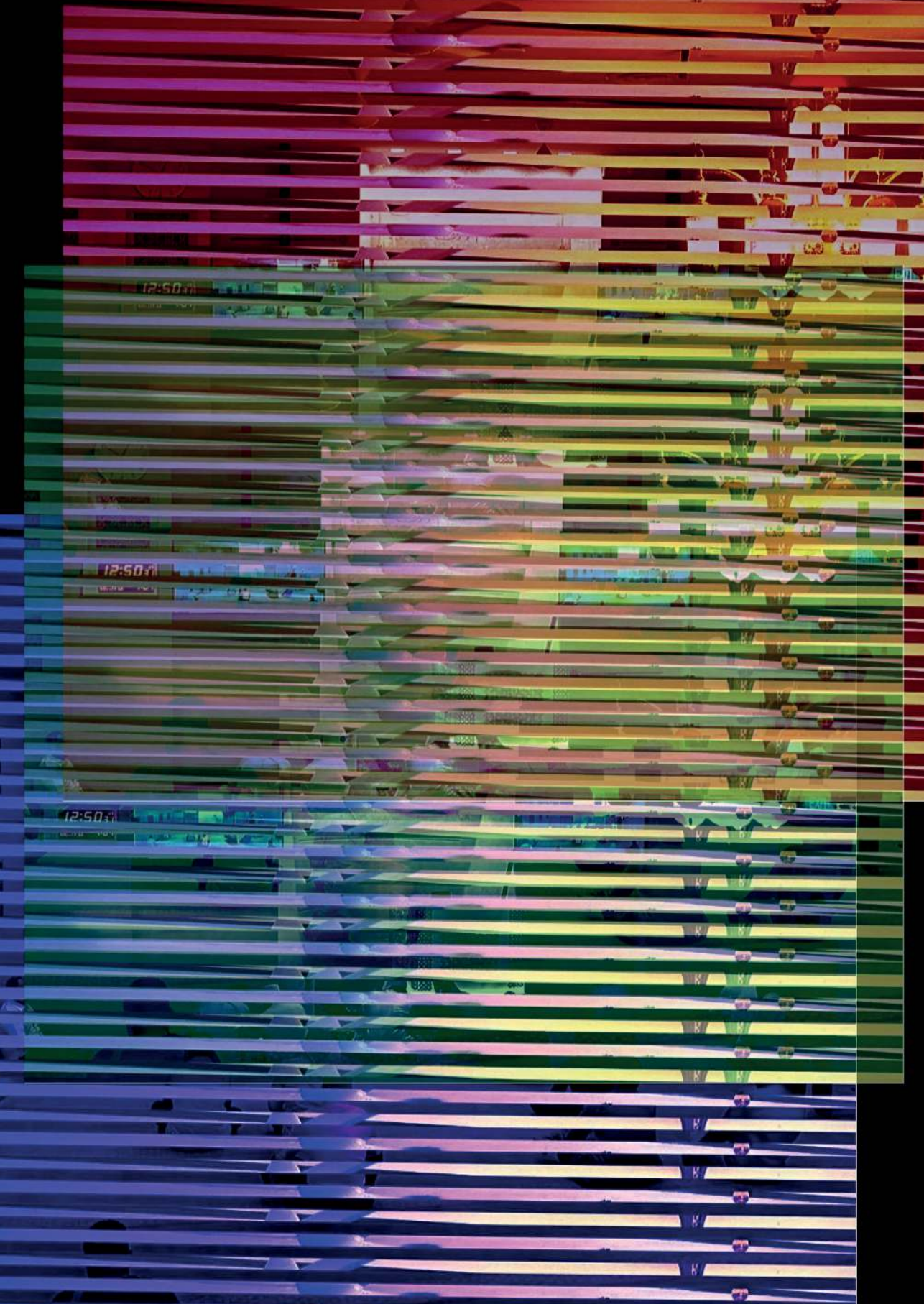
[Wan's tour ended at a path by the water, where the Indian Ocean and South China Sea mingle. As I joined the congregation around him, I heard waves washing across the beach. By the path was a clearing in the trees. There, peeking from the leaf litter, were the posts of Muslim graves, some tied with yellow cloth. Wan pointed to the spot where the island's mosque had once stood.

Stood in the absence of a mosque, we watched Wan perform the call to prayer for a community that no longer existed. As he finished the Azan, he began to cry.

In this transduced version, Wan's call to prayer is slowly drowned out by the sound of electromagnetism which overwhelms all other sound, even drowning out the forest. As it fades, we hear the tail end of the Azan.

How long before the electrical sounds overwhelm Ubin like they have in the rest of Singapore?]

[38:30 – End]



THE FUTURE, AN INTERLUDE: PART 3, MELANCHOLIC FUTURES

The alternative futures that my interlocutors imagined whilst ‘hearing’ AI were melancholic in mood. Iskandar spoke of death as the path to his ideal Singapore, LC reflected on the inevitability of the government agenda, and Wan described his imagined future as impossible. The presence of the foreclosed futures, where one imagined future is so prominent that it makes other possibilities inconceivable, is undeniable. Yet, the incontestable future which this thesis has described remain haunted by the paths not taken. Each of my interlocutors harked back to a Singapore of community, of connection, and of tranquillity. Even in the face of technological hegemony, their minds drifted to a future past, even though it seemed distant.

However, I have some trepidation about viewing these futures as hopeful. By describing them as hopeful runs the risk of presenting them as problem-less and perfect. Listening to this chapter with my colleague Sidd he commented, “what do we do with these impossible futures?” He reflected, particularly on Iskandar’s use of the term *kismet* which he argued connoted an accepted state of the present and future. *Kismet* is the Turkic term for predestination in Islam, and therefore, connotes that events are part of a larger plan defined by Allah. However, whilst the power of predestination exists within Islamic faith, it is paired with individual free will. Whilst things are indeed fated, individuals are still impelled to act. Perhaps, acting on the future in the face of Singapore’s forcefully asserted foreclosed futures, can only be accessed through imagining alternatives.

Taking this perspective as a starting point, the idealised pasts described by my participants might be seen as myths, as they draw on perhaps idealised histories, to make the present intelligible. As afro-futurist scholar Yusuf Nuruddin argues “myths are instruments by which we continually struggle to make our experience intelligible to ourselves” (Nuruddin 2006, 130). Wan’s descriptions of Ubin past where community can be reached by simply shouting out of a window, are therefore, ways of reflecting and acknowledging the current state of alienated affairs.

Yusuf Nuruddin explores this idea through the Islamic futurist poem “Beyond” by the grandfather of rap Jalaluddin Nuruddin⁹³. Jalaluddin Nuruddin’s poem predicts the end of the world. The air on the surface of the earth has become so toxic that the few remaining survivors move to the centre of the earth. The survivors are split into two groups, the Jinn, who represent Muslim African Americans in the story, and the leading elite. The jinn, accepting their fate, argue that they should repent for their sins to Allah and return to the surface. The elites in their hubris instead defy Allah again, creating an Artificial Intelligence to save them. The AI fails and the elites not only die but are condemned (Nuruddin 2006). The poem is bleak, the only hope of salvation in the story is to accept death, like Iskandar suggested.

However, through this bleakness Nuruddin argues that afro-Islamic futurism creates “Urban myths [that] give philosophical meaning to the quotidian facts of domination and exploitation” (Nuruddin 2006, 130). Therefore, when LC discusses community as a counter-future to the individualistic Singaporean mainstream we should not see this as a literal depiction of the community as a perfect alternative. As she puts it, in fact, in her eyes a community-oriented Singapore would embrace imperfection. Instead, the appeal to community, or to tranquillity, or even to the past, reflects the absence of these things in contemporary Singapore.

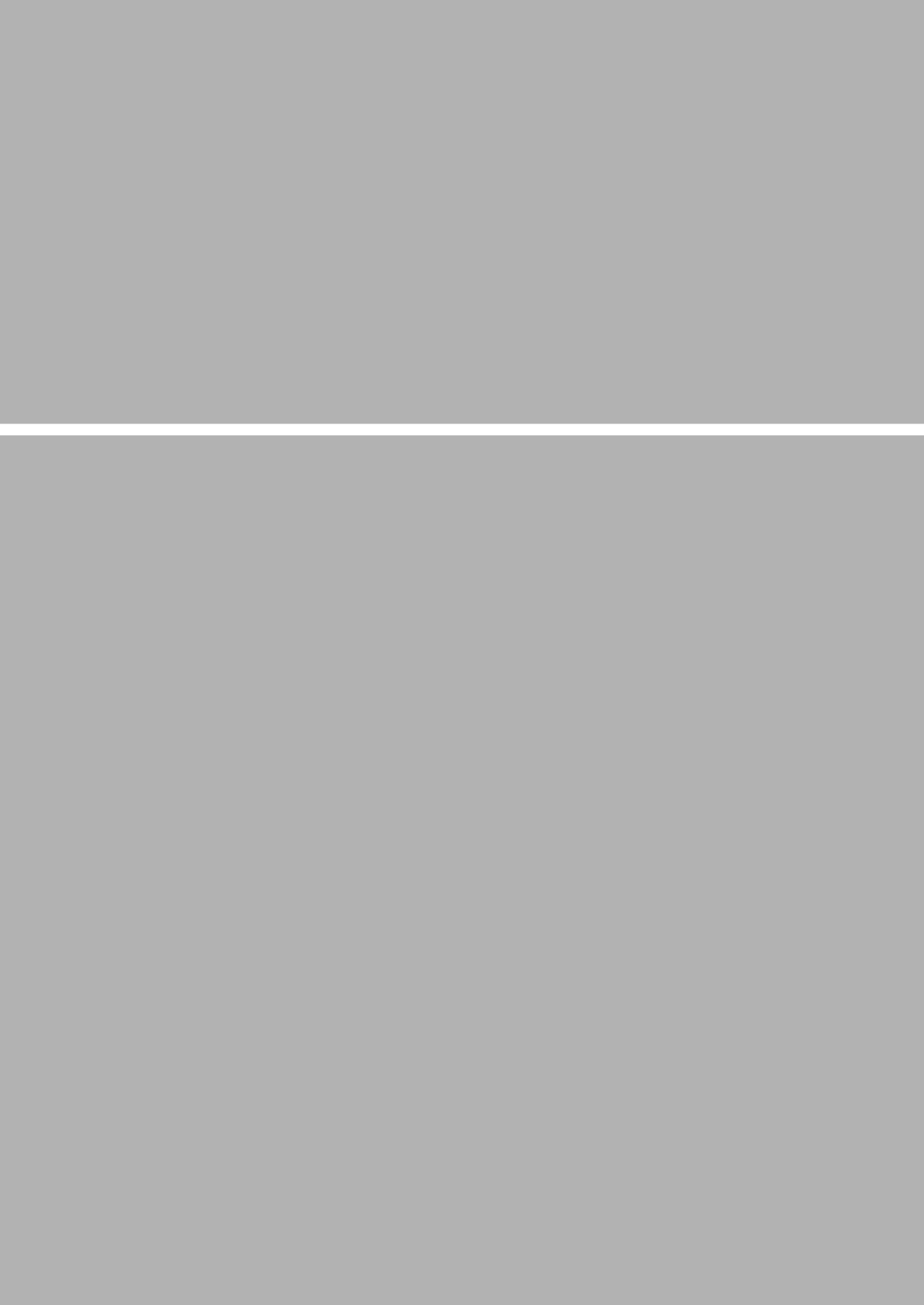
These future imaginaries are also opportunities to reflect on how temporality works in Singapore. For example, Iskandar describes Singapore’s future as being based on, ‘robustness’, ‘active energy’, and ‘things overpouring.’ Likewise, LC associates the loud abrasive electrical sounds of the hydroelectric dam with Singapore’s temporality. In both cases, these observations reflect on their sense of Singapore’s frenetic energy, a product of the imperative to constantly expand and become more productive (Rosa 2016). Collins argues that this kind of constant activity breeds presentism “a state of perpetual change is the same as perpetual stasis” (Collins 2008, 3). This is something both LC and Iskandar reflect upon, mentioning the buzz of constant activity in Singapore which can feel overwhelming.

Making such observations about temporality Parikka (2018) argues, allow us to understand the way power works. In so doing she argues “instead of simply accepting the notion of a cancellation of the future, the can-

93 As far as I can tell, Yusuf and Jalaluddin are not related.

cellation quickly shifts into a tactical multiplication” (Parikka 2018, 55). By holding up a mirror to Singaporean temporality, my interlocutors are able to create the possibility of alternatives. As Inayatullah argues when discussing utopian ideas “This future is certainly not probable, but it is still possible. And while it is a dream for now, is there really any choice” (Inayatullah 2005, 1199). Whilst Singapore is likely to continue being a busy metropolis, full of constant activity, simply imagining otherwise undermines that foreclosed future.

Throughout this thesis, I have pointed to the foreclosed nature of Singaporean futures. AI as it is frequently presented as objective in Singapore. Often the appearance of this objectivity is achieved by distancing people from the affective processes that produce AI outputs. This distancing makes AI outputs seem incontestable. These systems are powerful, and their epistemology holds sway in the processes of the Singaporean state. Consequently, AI frequently now intervenes in the interactions between state and citizens. AI has significant sway over the construction of the present and the future. However, as we have seen, when AI is engaged with intimately, through annotation, or by transduced listening, its fallibility can be exposed. The melancholic futures which my interlocutors described in these moments of encounter, demonstrate that while the future is contingent it also contains multitudes.



Conclusion

Blurring the Future

REGURGITATING THE PAST

The Science Centre Singapore in Jurong East is a centre for disseminating scientific knowledge. However, its outdoor waterworks exhibition, consisting of several water pipes which shoot out water and the smell of chlorine which hangs in the air, makes it clear that their target audience is small children. I was there to see a talk from Immanuel Koh, Assistant Professor in both Architecture and Sustainable Design (ASD) and Design and Artificial Intelligence (DAI) at the Singapore University of Technology and Design (SUTD). He was there to present as part of the Science Centre's monthly Science Café. That evening, I was ushered into the Science Centre café, from which I assume parents usually watch their children play in the waterworks exhibit. I took my seat and was offered a complimentary beer, which along with a buffet dinner came as part of the ticket price.

On that evening it was clear that the event's target audience was a little older than the Science Centre's usual clientele. Most of the audience seemed to be young professionals, and as we waited for the event to start, the crowd was treated to a DJ playing electronic music. This included *Insomnia* by Faithless. As the DJ played, a screen behind him cycled through AI generated images of futuristic buildings which looked much like the skyline of Singapore. Behind the images of skyscrapers, the “digital rain” made famous by the *Matrix* movies fell past in green columns. I remember thinking at the time that it was strange that in trying to evoke the “future” the event organisers had selected a song from 1995, and visuals from a movie released in 1999.

However, as Mark Fisher (2012) argues, this should come as no surprise given how electronic music has become an aesthetic of futurism. As he puts it, “If electronic music was “futuristic,” it was in the same sense that fonts are “gothic”— the futuristic now connoted a settled set of concepts, affects, and associations” (Fisher 2012, 16). As a result, thirty-year-old music gets used at an AI event to connote the future.

Throughout my time in Singapore, and throughout this thesis, I have found that the ‘future’ is often constructed in dialogue with the past like Fisher describes. Further, as I have argued, AI systems, which abound in Singapore, tend to regurgitate what appears in their database. With the state and AI strongly asserting a future based on a particular past, we might assume that Singaporean Muslims imagine those futures too. But

do they? This conclusion aims to answer that question by asking “What futures are imagined by Muslims in a Singapore dominated by AI enabled technologies and their regurgitative futurities?”.

Contingent Futures

Prominent Islamic futurists like Ziauddin Sardar and Sohail Inayatullah have lamented the fixation on the past in Islamic futurism. As Inayatullah argues “A living prophet with a geographically bounded state – that remains the vision of future for many Muslims...social and political ‘progress’ has focussed on returning to the ideal perfect era” (Inayatullah 2005, 1195). Meanwhile, Sardar was even more strident claiming that, “Contemporary Muslim societies prefer to look back, wallow in nostalgia for the “golden past” rather than plan and work towards a vibrant future” (Sardar 2006, 572). Yet, perhaps ironically, in Sardar’s own account of Islam’s potential future he harks back to examples of the Prophet showing foresight and quotes this verse of the Quran “Beware of what lies before and behind you, so that you may be given mercy” (36:45). Even in attempts to explicitly look forward in time, it can be difficult not to be drawn back to the past.

This pattern of the past shaping the future is also clear in the narratives of the Singaporean state. As this thesis has repeatedly mentioned, the fear of racial violence like the riots seen in the 1950s and 60s, still plays a significant role in the management of race within Singapore. As Chua (2003), Abdullah (2016), and Babcock (2023) have shown, the violence of the past is forcefully brought into the present through policies of multi-racialism, SMI, and CMIO, wherein race must be carefully managed and identity categories consciously separated. These concerns about racial disorder are then projected into the future, where they are imagined as proximate danger. As the Preeti and Subhas parody song called “K. Muthusamy” and its resultant fallout show, even talking about race is perceived as an attack on racial harmony which inevitably leads to the violence of the past.

Simultaneously, the history of 1960s race riots is intertwined with Singapore’s former relationship to Malaysia. The link with Malaysia continues to haunt Singapore and motivates its emphasis on the “imperative to be smart” (Calder 2016). Since the separation from Malaysia, Singapore’s vulnerabilities, both economic and military, have been emphasised. This focus on economic survivalism in part motivates the move to become an AI hub for Southeast Asia. With limited natural resources and population,

which prevent it becoming a production centre, Singapore has understandably focused on becoming an intelligence economy. However, even as Singapore turns toward emerging technologies and the future, these choices have an eye towards its peninsular past.

As I argued in Chapter 2 of this thesis, Singaporean techno-anxieties and governance processes deriving from state narratives of the past fit neatly with an AI epistemology. As Aradau and Blanke (2022) show, AI systems claim to be able to work across scale by decomposing individuals into data points, which can later be recomposed as an “average” citizen. This fits neatly with the multi-racial policies of the state which categorise identities which seek to consciously manage racial differences, due to anxieties about past racial violence. This datafication also fits with the country's emphasis on neoliberal governance. This neoliberal governance style emphasises making rational decisions based “on datasets and forecasts [that] sustain the economic rationality of efficiency, performance and quantitative deliverables proper of neoliberal economics” (Cardullo 2021, 17). These are exactly the kinds of claims the Singaporean state, via the State-Owned Enterprise AI Singapore, makes about AI, describing it as “just data fed to maths.” Even within the proclamations of a “new” kind of governance lurk the policy priorities of the PAP which date to the 1960s. AI here emerges as a regurgitation of the neoliberal past, and its promises.

Claims about AI objectivity are also claims about the predictability of the future. As Chapter 2 showed, through this process of “feeding data to maths”, AI Singapore claimed it could predict anything, from the price of HDB apartments to who would default on their loan. However, as they demonstrated, these future predictions relied heavily on historic data. As they described at the event, these systems are designed using a process of back propagation wherein the input data is tweaked until the system is about to produce answers which match known answers. For example, an AI might be trained on data from the 90s to predict HDB prices in 2000. Therefore, the epistemology of AI operates on the assumption that the future will be like the past. Even predicting the future with futuristic AI technology leaves one foot in the past through its ties to historic data.

Furthermore, as explored in Chapter 4 of this thesis, LLMs like ChatGPT are built on archives of data. By viewing the datasets which empower AI systems, we can ask the same kinds of questions that historians have asked of archives since the early 2000s (Schwartz and Cook 2002).

Namely, what is included and excluded within these supposed “objective” repositories and who has power over these choices (Carter 2004). When reading for the fictions ChatGPT perpetuates my participants argued that AI was simply regurgitating MUIS talking points. For example, ChatGPT talked about a future Muslim community in Singapore which was “more visible and active in society”, something which my interlocutors rightly pointed out sounded like it came directly from the SMI. A replication of PAP anxieties about racial harmony. So long as Singaporean Muslims are asked to become modern and active, they will never be considered full citizens. To quote one of my annotators “why can’t the hijab be modern?”. Consequently, not only do LLMs draw on the past by regurgitating an average of its archive, but they also resign the Muslim community to the past. A past often presented by the state, with the Muslim community on a linear path towards being “modern” Singaporean citizens, but never quite arriving.

However, as Rosa (2016) argues, it should come as no surprise that technologies repeat the ideals of the society which create them. As he argues, technology does not lead to the societal speed up that we all experience, but rather technology responds to the demands of capitalism. Likewise, the categorising logics of AI systems are not a coincidental aspect, nor do they reshape approaches to governance. Rather AI systems, like all technologies, respond to the historical, political, and social conditions which produce them. AI creates and reifies racial differences because, especially in Singapore, historically this is how race has been governed.

MUIS as the state’s intermediary with the Muslim community is also part of this paradigm. As this thesis explored in Chapter 3, MUIS is trapped in an authority bind. It is caught between its desire to support the community, and its administrative responsibility to carry out government policy. Consequently, MUIS has turned to AI as a possible remedy, a way to increase the speed of their responses to community needs and reassert authority via AIs perceived objectivity. Yet, whenever I spoke to my interlocutors, members of the organisation and lay believers alike, they wanted to discuss past the mis-steps of MUIS rather than AI technology. Many of my interlocutors even acknowledged the authority bind MUIS is in. They were well aware that MUIS pronouncements were proxies for PAP rhetoric. However, it was this relationship that undermined MUIS, and the associated history of PAP discrimination against Muslims. Whether AI can be the solution to MUIS’ authority bind remains to be seen as their AI Fatwa Bot project comes to fruition.

However, as the works of Bunt (2003, 2018), Solahudin and Fukhu-roji (2019), and Selby and Sayeed (2023) show, religious authority within digital spaces has tended to follow existing patterns of authority. Whilst emerging technologies create new ways to interact and new intermediaries between religious institutions and lay believers, the sites of power have remained consistent. Despite early concerns in the academic literature that the internet would undermine traditional centres of religious power (Eickelman and Piscatori, 1997; Robinson, 2009), it has become clear that digital technologies both recreate the ideas of the past and reaffirm authority relations. As Selby and Sayeed (2023) showed, even in the marketplace of ideas online, believers still gravitated towards the brand names of existing religious authority. As Bunt argues in the conclusion of his early work on Islam and the internet:

“By seeing it as part of the process, it may be that the technology will become so natural that it is ignored altogether, being seamless with the extracts from the Qur’an that were inscribed on rocks and skins and memorised in the minds of believers” (Bunt 2003, 211).

Perhaps AI will follow the pattern of the technologies which preceded it and the authority of MUIS will operate much as it has in the past, despite the intervention of AI systems. I am reminded of a comment from my interlocutor when I asked if he suspected that Friday sermons were being written with ChatGPT, “I would feel, honestly, because of where the quality of the sermons is today there would be no difference.”

This may all seem to point to a foreclosed future, one with a narrative weight so strong that it is hard to imagine otherwise. If the future is so rigidly defined by the past, then surely the future is already written. The narrative of Singapore’s future is certainly powerfully asserted by the PAP government. The state’s focus is on averting crises, whether that be economic, military, or the flaring of racial tensions. That vision is also enacted by its intermediaries with citizens, like MUIS or AISG, who in turn regurgitate state concerns about racial violence and economic precarity, respectively. It is also entrenched by the technologies of AI which affirm existing narratives through the regurgitation of its own archive. All of these futures produced by the state, its intermediaries, and technology reaffirm a particular narrative of the past and therefore produce particular visions of the future. We might expect then that Singaporean Muslims imagine a future defined by the confines of state narratives, an AI future.

However, even in the case of MUIS, we see how the application of these narratives becomes blurry. Abdul acknowledged that his role within the organisation was to implement AI technology, despite his personal, theoretical, and theological misgivings. As he fatalistically put it “AI is here so we have to use it.” Yet, he still found ways in his work to mitigate its influences by trying to create a curriculum in which people would be trained to understand how AI works and its limitations. Within MUIS itself there are different views and approaches to the questions of AI and engagement with the state. This fact even sometimes frustrated my interlocutors who criticised the organisation’s lack of consistency. Even if MUIS were monolithic and consistent, the Muslim community certainly is not, and how these narratives are received differs widely. As Bear (2016) argues, foreclosed futures can be overturned simply by reaching for alternative narratives. What the inconsistency of MUIS points to is how ‘clear’ narratives about the future asserted by the state quickly become messy when applied in reality.

Likewise, it has been argued since at least the Macy Conferences, which laid down the foundations of cybernetics and AI, that technologies face the same problem. Whenever the outputs of digital technologies leave the reified spaces of computing and enter messy reality, their inability to account for context becomes clear. For example, as Hayles (1999) shows, the information theory of Shannon and Wiener treated words as non-contextual with their meaning remaining static regardless of the situation. This allowed for efficient transfer of information across mediums, but it is easy to imagine how this limits the accuracy of that data.

The members of the Macy Conferences certainly saw this as a flaw and spent many years attempting to propose an alternative. Despite these attempts, reified metaphors like decontextualised word meanings, have become central to the development of AI technologies (van Rooij et al 2024). It is for this reason that Amoore (2020), in her book *Cloud Ethics*, has argued that regardless of ethical guidelines, algorithms will continue to produce biased outputs as they move from the reified space of metaphor into complex reality. Her argument has thus far been born out, as algorithmic systems produced by governments continue to produce biased outcomes despite the application of ethical frameworks.

When I met with two artist researchers in the final phase of my fieldwork, I asked them if an alternative future was possible in Singapore. They responded immediately and almost in unison, “There must be!”

and “There is no future! We are creating it now.” Despite seeming to contradict, they agreed, that the future did not exist. What is called “future” in Singapore is just a narrative, one which the two of them called a ‘vulnerability’ narrative, where we must use AI or Singapore will be in danger. However, as they pointed out, this risk does not yet exist, and therefore, another narrative can be chosen to shape our action in the present. It is in this blurry space, between clean narratives and messy application where the future can be contested. Whilst the past inevitably shapes the future, perhaps that future can be pluralised by reaching for different pasts not included within the central narrative.

Blurring the Future

This is not a thesis about Islamic futures. As explored in my note on positionality, I am non-Muslim and not Singaporean. I therefore have neither the authority nor inclination to speak on what technology will mean for Islam, or how Islam as a religion ought to respond to AI. My view is that attempting to define an Islamic future in Singapore would require me to apply theological meaning to what my interlocutors told me. In so doing, I would be asserting my vision, and narrative, over their experiences. Consequently, I engage directly with theological ideas only when my interlocutors explicitly refer to them. Therefore, this is a thesis about how my Muslim interlocutors imagine the future of Singapore. Whilst this was a methodological and ethical decision, I would argue that taking this emic approach to interpreting my interlocutors’ ideas has bearing on the theoretical conclusions of this thesis.

Focusing on individual professions of faith naturally gives rise to questions about the nature of Islam. These are questions which have been central to the anthropology of Islam since the 1960s. At that time, Geertz argued that for all Muslims, common Islamic concepts help to “render the strange familiar, the paradoxical logical, the anomalous, given recognised, if eccentric, ways of Allah, natural” (Geertz 1968, 101). Whilst this argument is compelling, and the universality of Islam is an important tenet of many Muslims’ faith, I also agree with El-Zein (1977) that presenting Islam as a monolith in this way opens up Muslims to criticism for discontinuity or inauthenticity. El-Zein, therefore, proposed an ‘Islams’ approach to researching the faith in which different expressions of the faith emerge based on their cultural milieu.

In this debate, I find myself drawn to the work of Talal Asad. In 2009, he reflected on the development of his ideas about religion. As a young man,

he had contrasted the faith of his father, an intellectual who converted to Islam for its liberatory and political potential, with the faith of his mother who had no formal education. He argues that he interpreted this difference as her life having a lack, because she did not critically engage with her faith. However, as he began to understand Islam as a discursive tradition, he saw his mother's faith differently, writing

“My mother didn't intellectualize her religion, but by that I don't wish to say that she was 'a blind follower'. Her prayers, recitations, and fasting were intended neither for other people to decode nor for enhancing her own experience; they were addressed to her God” (Asad 2009, 4).

The contrast between his mother and father was not a question of intensity or intention, or of engagement, but rather a difference in what parts of their religiosity they chose to dialogue with. From this perspective, there is no contradiction in Islam being articulated differently. There is one Islam, but it is not monolithic, because each Muslim is in dialogue with different aspects of the faith. Each person reaches for different narratives of the past to define their present and future.

I would argue that it is via this perspective that the future can be conceptualised as pluralistic whilst simultaneously being contingent on the past. However, we can see that past as either monolithic, as in the PAPs presentation of the past, or as pluralistic. As I argued in Chapter 5, “act blur, live longer”, bani, Nurul and Iskandar resisted the state category of ‘Muslim’ by blurring how they performed their religiosity in public art performances. By being unclear publicly, they allowed themselves to act in ways that transcended the categories imposed by the state. While AI, as this thesis argues, decomposes individuals into data points which can later be recomposed into the ‘average’ citizen, the works of these artists resist the limitations of the SMI and CMIO. In this blurring they are able to reach for narratives beyond the Singaporean mainstream. bani seeks a more syncretistic Islam, Iskandar one which transcends space, and Nurul one in which women are allowed to transcend the binary of oppressed and liberated.

In their works, each of these artists reach for a different past which is not included in the official narrative. In bani's work he reflects on the history of syncretic practices which have long been an aspect of Islam in South-east Asia, but which are branded as ‘un-Islamic’ by MUIS. Nurul reflects

on how Muslim women have been represented in images, and how these images perpetuate a colonial gaze which continues to influence Singaporean politics. Iskandar, meanwhile, returns to a time in Singaporean history when the city's mosques were not controlled centrally by MUIS and therefore reflected the aesthetic diversity of Singapore's Muslim community. Each of these approaches to the past have something different to tell us about the future of the Muslim community. By being in dialogue with different pasts, they are able to blur the foreclosed future.

Likewise, in Chapter 6, when confronted by the pervasiveness of electrical sound around Singapore, my interlocutors did not imagine the foreclosed futures of Singapore when listening to electromagnetic sound. This is because, unlike within state narratives, my interlocutors once again reflected on different pasts. In Iskandar's past, Malaysia is not a threat and proximate danger, but rather a separated lover. From this perspective he is able to speculate on a future which is tranquil and foregrounds connection. When he mentions this quiet Singaporean future he reflects on a moment during the pandemic when Malaysian workers who failed to make it back before the border closed waved to their family at the causeway between Singapore and Johor. A moment of connection within separation. Wan also reflected a different past, remembering a time on Ubin Island when the Orang Pulau community lived there communally. In these events Wan makes the Orang Pulau community of the past, present in the absence of a mosque. A past which resists the pervasive idea that Singapore is purely a nation of immigrants (Chua 2003, 59). LC on the other hand remained in the present but focused on different aspects of the Muslim community. Perhaps not perfect, but still a community of warmth. An idea which resists the suggestion from MUIS, via the state, that the Muslim community still needs development to become 'good' citizens (Barr 2013).

These futures still refer to the past. However, what differs is the pasts which motivate them. Each of these imaginings of Singapore, from bani to Wan, relies on and is in dialogue with a different past. This is in contrast to the mainstream future which is based on a singular history of Singapore. A history that likewise does not appear in AI databases because they trend towards the hegemonic narratives asserted by the state. As the historians Hong and Huang put it, "a Martian with only the official script would think that there is only one political movement- the PAP; two important personalities in Singapore- Stamford Raffles and Lee Kuan Yew; and three dates- 1819, 1942 and 1965- that are worth remem-

bering’” (Hong and Huang 2008, 15). By complicating this official past my interlocutors were able to blur the foreclosed future. To paraphrase Iskandar, the path to the future suddenly less resembles train tracks, and more those innocuous jungle markings.

It could be argued that these futures are too idealistic. They picture a Singapore which cannot be reached, but with them comes a kind of melancholic acceptance. As Iskandar put it when discussing his work *nur*, “[it] alludes to that sense of impossibility, or of a melancholic dream, a utopia which will never materialize”. However, whilst these futures are not the likely ones, reflecting on alternative possibilities and temporalities can help make sense of the quotidian domination of the state (Nuruddin 2006). Even through these idealistic, melancholic futures there is an opportunity to reclaim both the past and the future.

LIMITATIONS AND FUTURE RESEARCH

One major limitation of my research is its timing. Whilst LLMs were big news in 2023 when I conducted fieldwork, their use by the general public had not yet become diffuse. My interlocutors often knew a lot about AI, but the majority said they had only used LLMs like ChatGPT once or twice, and even fewer had used them in a religious context. Similarly, MUIS was only just beginning its AI project, the AI Fatwa Bot, and I only met with its development team in my final weeks in Singapore. What becomes of that project will certainly have a significant bearing on the future of the Muslim community in Singapore. Whether for good or ill remains to be seen, and future research on this topic would add much to this thesis.

As a consequence of being early, I rarely got the opportunity to witness my interlocutors engaging with AI systems. There was not much talk at that time of critical prompt engineering in Singapore, and what there was had not really filtered into the lives of my interlocutors. As a consequence, my research focuses more on observing outputs produced by ChatGPT and other AI systems. However, I maintain that focusing on what a system produces still provides valuable insight on how that system works. To quote Stafford Beer, “The purpose of a system is what it does⁹⁴” (Beer 2012). What I present here is what ChatGPT did at the time,

94 Beer, S (2012) “What is Cybernetics? Conference by Stafford Beer.” . Accessed: 16 December 2025.

not what users could potentially make it do, although the latter would make for compelling future research that could further expand ideas of blurring through user input.

Finally, it might well be argued that my interlocutors are not wholly representative of the Muslim community in Singapore, made up as they are of Ustaz, artists and activists. This is true. Many more perspectives make up the Singaporean community, and here, I have barely scratched the surface. However, as I argued in my note on positionality, I did not aim for completeness, but rather to engage in dialogue with the people I met. I wanted, therefore, to represent their position, one which is resistant to the idea of an AI future. Their positions are not representative of Singapore, where an AI-future is the hegemonic one. They are, as Foucault-Welles (2014) might refer to them, outliers. But this does not negate the importance of their perspectives, which continue to be valuable to the conversation on Singapore's future. Exploring other outlier perspectives, not included in this thesis, would also be a potential site of future research.

Speaking of Foucault-Welles (2014), her argument that marginalised voices can be found in the outliers of big data speaks to a tension caused by AI enabled urban governance which I hope to explore in future research. A foundational argument of this thesis is that because AI is based on an average representation of its huge databases, it can fail to represent diversity and idiosyncrasy. The promise from AI evangelists is that more data will solve this problem. I have argued throughout this thesis that this is just another deferred future – a future which is promised but never arrives. However, Foucault-Welles (2014) gave me pause. What if, as she suggests, we looked at the outliers of big data? Then we could see idiosyncratic parts of larger communities in ways we never had before.

The question this raises is, what if marginalised groups do not want to be seen? As the trans activists and writers, who I refer to in Chapter 5 of this thesis, point out, visibility is a double-edged sword (Cárdenas 2017). Visibility can lead to greater representation, and more legibility by the state. However, being made legible to the state can also make marginalised groups vulnerable to its violence. The question then, is if those outliers wish to be seen in the big data. As AI enabled technologies such as facial recognition software become more ubiquitous, being visible may no longer be a choice. Whilst I touch on this question in the latter half of my thesis through the concept of blurring, I aim in future research to dig

deeper into these questions of visibility and legibility. Can we preserve the right to opacity within data saturated governance structures?

What Future do Muslims Imagine in AI Dominated Singapore?

One of the primary tensions in researching the future is that, as Sardar argues, “the future does not really exist. It is a time that has yet to be reached” (Sardar 2006, 564). The only way we ever experience the future is in our imaginations, and what we imagine is based on the past. Consequently, the future is directly tied to the past. It would be easy to conclude that the future is entirely contingent. However, most anthropologists of the future warn against this as too deterministic. The future does not exist yet, so whilst it reflects on what has already passed, it is still open and up for grabs.

We could make a similar kind of argument about the Muslim community. There is no singular Muslim community. As Asad argues, Islam is a discursive tradition that is in constant flux. What aspect of the tradition a believer engages in may shift and change based on the time and context (Asad 2009). As I have shown, my interlocutors emphasised different aspects of their identity, of their religion, and of their history in their imaginings of the future.

Furthermore, as I argued in the methods chapter of this thesis, AI is a similarly blurry concept. What AI is depends on the context. It could be an ideology, an epistemology, an infrastructure, an archive, or an imaginary. Not only that, but it is also a sprawling multi-national mega-structure. Just as what “Islam” and “the future” mean depends on what parts of those terms you interact with; AI is a concept which means different things based on where you stand.

I might conclude then that the question “what futures are imagined by Muslims in a Singapore dominated by AI enabled technologies?” is not coherent. It would be reasonable to ask, “what future? What Muslim and what AI?” And yet, just like I argued about the state, most of my Singaporean interlocutors understand the question. This is partly because the Singaporean state has so successfully asserted its vision for AI and the future. In the state narrative, AI is a way to ensure the economic prosperity of Singapore, whilst simultaneously creating policies which can work for all citizens at all scales. It is promised that in the future, Singapore will be a fully automated Island where citizens’ needs are met

before they realise, they have them (Koay 2017). However, these futures are tied to a neoliberal, colonial past where all Singaporeans are classified by race, and where Muslim Singaporeans in particular are marginalised. Even though this question evokes many blurry concepts, all my interlocutors had experienced the ways in which state narratives of past, present, and future impacted their everyday lives.

By re-engaging with different pasts, my interlocutors manage to complicate the smooth, clean, 'objective' narrative of AI futures asserted by the state. By exploring these alternative narratives, I have tried to show how whilst all futures are contingent on the past, they are not necessarily foreclosed, because which past to engage with remains open. Consequently, possible futures proliferate endlessly. Each Muslim in Singapore, in dialogue with a different past, a distinct part of Islam and another aspect of AI, generating a unique alternative future. As Escobar argues quoting the Zapatista movement "Queremos un mundo donde quepan muchos mundos (We want a world where many worlds fit) (Escobar 2019, 16). Ultimately, the singular 'future' is just another reified metaphor which stands in for the blurriness of lived reality.

What futures are imagined by Muslims in a Singapore dominated by AI enabled technologies? They are blurry, multiple, and only a handful of them were presented here. Consequently, they all resist the foreclosed futures proposed by the Singaporean state, the PAP, and the AI enabled Smart Nation.

SUMMARY

In 2014, the Singaporean state began its Smart Nation project with Data Spark: a collaboration with the state-owned telecoms company Singtel. The project placed thousands of cameras and sensors around the city, in order to create a data feedback loop which could inform government policy. Since 2017, with assistance from Japanese tech conglomerate NEC, these cameras have been equipped with AI-enabled facial recognition software. In the intervening years, this network has expanded. By 2030, the Singaporean police aims to have 200,000 cameras across the Island. The state positions itself as a testbed for techno-governance, and a hub for AI in Southeast Asia. The Singaporean state imagines its future as one where technology and data feedback loops ensure the smooth functioning of government policy.

Situated Within this wider techno-governance milieu is MUIS, the Islamic Religious Authority. As a statutory board, MUIS has close ties to the ruling PAP (People's Action Party). Consequently, the religious authority often find themselves acting as intermediaries between the State and the Singapore Muslim Community. This position can be fraught given the governments historical marginalisation of the Muslim community. MUIS, therefore, represents a site where the governments techno-futurist imaginaries come into contact with the messy reality of people's everyday lives. My research arises from this tension, explores how MUIS takes up government-promoted AI technologies for religious governance, and examines how these technological innovations are received by Singaporean Muslims.

This leads me to the question; "What futures are imagined by Muslims in a Singapore dominated by AI-enabled technologies?" By dominated, I am referring to more than the AI interfaces which people consciously engage with as users. AI is much more than its textual or visual outputs. In this thesis, I engage not simply with interfaces, or algorithms, but with AI as a broader set of material and imaginative conditions. AI in my view represents several facets. First, an imaginary: one held by a Singaporean state hoping for objective, data driven policy. AI here is a way of thinking about the world which shapes government policy. Second, AI is increasingly perceived as a repository of 'truth' by some state institutions in Singapore wherein information contained and produced by these systems are positioned as objective. Finally, AI is a multinational infrastructure supported by networks of cables, cameras, and data centres. For example,

in Singapore, many data centres are located across the border in Malaysia, many government AI systems rely on a base of ChatGPT software developed in America, and the raw materials of these systems come from all around the world. In all these ways AI saturates the everyday lives of Singaporeans. Despite this ubiquity, however, AI systems are often invisible. They are used within state institutions, stored in data centres behind fences, and consequently blur into the background.

Through collaborative methods this thesis begins to peel back the layers of AI systems, to make them more tangible to me and my interlocutors. Each chapter takes up a different perspective on AI systems in order to produce a partial-composite view of AI systems which are too diffuse to be understood from any one perspective. The opening ethnographic chapter explores how AI has become a central imaginary for the Singaporean state, and how these imaginaries shape representations of the future. The second chapter shows how MUIS turns this imaginary into policy through its AI Fatwa Bot project, and seeks to explain why the organisation feels compelled to integrate AI into their religious governance. The following chapter shows how AI “regurgitates” the contents of their database. I do so by framing AI as a kind of archive which like all other archives has power through what it includes and excludes. Finally, the last two ethnographic chapters explore how Singaporean Muslims refuse the ubiquitous AI futures asserted by the Singaporean state. The last chapter in particular makes the AI infrastructures of Singapore tangible by transducing them into sound which I then used in elicitation exercises aiming to render the city my interlocutors knew well in unfamiliar ways.

No single methodology could answer the questions arising from these multiple viewpoints. Therefore, to get a partial complete image of AI, I needed to think of it, together with my interlocutors, as its component parts. To do this, I needed to create contexts in which my interlocutors could experience AI in their everyday. To understand AI as policy I looked to the public talks of government institutions to understand how they defined it. To see AI as a cultural artifact which can be imagined in a plurality of ways, I looked to the work of artists and MUIS who use AI in different ways. To read AI as an archive, I allowed my interlocutors to annotate ChatGPT’s writing in order to question how it regurgitates the texts within its database. Finally, to hear AI as an infrastructure, I walked with my interlocutors through fields both visible and electromagnetic to speculate on where AI existed. Taken together, these parts of AI create a composite, partial, image of AI as it intervenes in daily life. AI is a

technology which is shaping government policy, writing, soundscapes, and our future, yet in many ways it remains strangely invisible. This toolkit of methodologies aimed to make AI tangible.

This methodology led to three main findings. 1.) While AI is a new aspect of Singaporean governance, it is motivated by old anxieties in Singapore. Namely, economic survivalism, which places the economy above all other priorities, and which emphasises that precarity of Singapore as a small nation surrounded by bigger ones. AI is seen as aligned with this anxiety because it is an industry which is perceived as not needing access to natural resources or manpower. 2.) This narrative which sees Singapore's neighbours as threats trickles down into MUIS, where they are preoccupied with ensuring that Singaporean Muslims follow a Singaporean conception of Islam. This is a consequence of the state historically positioning Muslims as an internal and external threat to stability because of their shared racial ties with the majority Muslim population in Malaysia. AI promises to help solve this problem by centralising religious knowledge and producing an authoritative "Singaporean Islam". 3.) Finally, I found that AI regurgitated State narratives in its outputs. I use the word regurgitate to reflect that AI systems can only reproduce the contents of their dataset. This is a result of the fact that AI recreates the average of its dataset, and therefore repeats biased ideas about the Muslim community which have proliferated in Singapore since the 1960s. My interlocutors were able to identify these narratives when annotating ChatGPT generated text, even when at first glance these texts seemed innocuous.

Despite the ubiquity of these future narratives, I conclude that many of the Muslims I met in Singapore refused the futures asserted by the state. They did so by reaching for pasts which are not included in the narratives present in the AI archive or state representations. These pasts construct Singapore's larger neighbours Malaysia and Singapore not as a proximate danger, but a lover separated from Singapore; the community as imperfect but warm, rather than a destabilising force; and Islam as a syncretic practice, to name just a few. What futures are imagined by Muslims in a Singapore dominated by AI enabled technologies? They are blurry, multiple, and only a handful of them were presented in this thesis. Consequently, they all refuse the foreclosed futures proposed by the Singaporean state, and the AI enabled Smart Nation. I refer to this process as blurring the future, in which the certainty about the future is intentionally undermined by proposing alternatives.

One limitation of my research was its timing. Whilst LLMs were big news in 2023 when I conducted fieldwork, their use by the general public had not yet widespread. My interlocutors often knew a lot about AI, but the majority said they had only used LLMs like ChatGPT once or twice, and even fewer had used them in a religious context. Similarly, MUIS was only beginning its AI project, the AI Fatwa Bot, and I only met with its development team in my final weeks in Singapore. What becomes of that project will have a significant bearing on the future of the Muslim community in Singapore. Whether for good or ill remains to be seen, and future research on this topic would add much to this thesis.

As a consequence of being early, I rarely got the opportunity to witness my interlocutors engaging with AI systems. There was not much talk at that time of critical “prompt engineering” in Singapore, and what there was, had not really filtered into the lives of my interlocutors. As a consequence, my research focuses more on observing how ChatGPT and other AI systems were being received, being talked, and thought about. What I present here is what AI systems did at the time, not what users could potentially make it do, although the latter would make for compelling future research that could further expand ideas of blurring through user input.

SAMENVATTING

In 2014 startte de Singaporese staat het Smart Nation-project met Data Spark: een samenwerking met het staatsbedrijf Singtel, dat zich richt op telecommunicatie. Het project omvatte de plaatsing van duizenden camera's en sensoren in de stad, met als doel een datafeedbackloop te creëren die het overheidsbeleid kon onderbouwen. In de daaropvolgende jaren is dit netwerk uitgebreid. De Singaporese politie streeft ernaar om in 2030 200.000 camera's op het hele eiland te hebben. Sinds 2017 zijn deze camera's, met hulp van het Japanse technologieconcern NEC, uitgerust met AI-gestuurde gezichtsherkenningsoftware. De staat profileert zich als een proeftuin voor technologisch bestuur en een knooppunt voor AI in de Zuidoost-Aziatische regio. De Singaporese staat ziet een toekomst waarin technologie en datafeedbackloops zorgen voor een soepel functionerend overheidsbeleid.

Binnen dit bredere technologisch-bestuurlijke kader bevindt zich ook MUIS, de Islamitische Religieuze Autoriteit. Als wettelijk orgaan van de overheid heeft MUIS nauwe banden met de regerende PAP (People's Action Party). Daardoor fungeert deze religieuze autoriteit vaak als intermediair tussen de staat en de moslimgemeenschap. Dit kan een lastige positie zijn, gezien de historische marginalisering van de moslimgemeenschap door de overheid. MUIS vertegenwoordigt daarom een plek waar de technofuturistische visies van de overheid botsen met de rommelige realiteit en het dagelijks leven van de Moslim gemeenschap. Mijn onderzoek vloeit voort uit deze spanning en onderzoekt hoe MUIS door de overheid gepromote AI-technologieën inzet voor religieus bestuur, en hoe deze technologische innovaties worden ontvangen door Singaporese moslims.

Dit leidt me tot de volgende onderzoeksvraag: "Welke toekomstbeelden hebben moslims in een Singapore dat gedomineerd wordt door AI-technologieën?" Met 'gedomineerd' bedoel ik meer dan alleen de AI-interfaces waarmee mensen bewust als gebruikers interacteren. AI is veel meer dan alleen de tekstuele of visuele output. In deze dissertatie wil ik mij niet alleen richten op interfaces of algoritmes, maar op AI als een breder complex van materiële en imaginaire factoren. AI vertegenwoordigt naar mijn mening vooraleerst een denkbeeld: een beeld dat wordt gekoesterd door de Singaporese staat in de hoop op objectief, datagestueerd beleid. AI is hier een manier van denken over de wereld om ons heen vormgegeven door mogelijke beleidsvormen. Ten tweede krijgt

AI steeds meer een archieffunctie waar de 'waarheid' wordt bewaard, en waarin informatie die door deze systemen wordt opgeslagen en geproduceerd, als objectief wordt gepresenteerd. Ten slotte is AI vandaag de dag een multinationale infrastructuur die wordt ondersteund door netwerken van kabels, camera's en datacenters. In Singapore bijvoorbeeld bevinden veel datacenters zich net over de grens met Maleisië, veel AI-systemen van de overheid zijn gebaseerd op ChatGPT-software die in Amerika is ontwikkeld, en de grondstoffen voor deze systemen komen van over de hele wereld. Op al deze manieren doordringt AI het dagelijks leven van Singaporezen. Ondanks deze alomtegenwoordigheid zijn AI-systemen echter vaak onzichtbaar. Ze worden gebruikt binnen overheidsinstellingen, inhoud wordt opgeslagen in datacenters achter hekken en werken welhaast onzichtbaar op de achtergrond van het leven van alledag.

Door middel van collobaratieve onderzoeksmethoden waarin ik nauw samenwerk met mijn onderzoeksparticipanten probeert dit proefschrift de verschillende lagen van de AI-systemen bloot te leggen, zodat ze zowel voor mij als voor mijn gesprekspartners tastbaarder worden. Elk hoofdstuk van dit proefschrift behandelt een ander perspectief op AI-systemen om zo een samengesteld beeld te kunnen schetsen van AI-systemen die anders te diffuus zijn om vanuit één enkel perspectief te begrijpen. Het inleidende etnografische hoofdstuk onderzoekt hoe AI een centrale rol is gaan spelen in de verbeelding van de Singaporese staat en hoe deze verbeeldingen beelden van de toekomst vormgeven. Het tweede hoofdstuk laat zien hoe MUIS deze verbeelding omzet in beleid via het AI Fatwa Bot-project en probeert te verklaren waarom de organisatie zich genooddaakt voelt AI te integreren in haar religieuze bestuursvormen. Het daaropvolgende hoofdstuk laat zien hoe AI de inhoud van bestaande databases reproduceert. Ik doe dit door AI te beschouwen als een soort archief dat, net als alle andere archieven, macht ontleent aan wat het wel en niet omvat. Ten slotte onderzoek ik in de laatste twee etnografische hoofdstukken hoe Singaporese moslims de alomtegenwoordige AI-toekomstvisie van de Singaporese staat afwijzen. Het laatste hoofdstuk maakt de AI-infrastructuren van Singapore "tastbaar" door ze om te zetten in geluid, dat ik vervolgens gebruikte met mijn onderzoeksparticipanten om hen te laten reflecteren op de stad die ze goed kennen om haar zo op een onbekende manier weer te geven.

Geen enkele methodologie kon de vragen beantwoorden die voortkwamen uit deze veelvoud van perspectieven die ik tegenkwam. Om een gedeeltelijk compleet beeld van AI te krijgen, moest ik het samen met

mijn gesprekspartners bestuderen vanuit de componenten waaruit zij opgebouwd is. Om AI als beleid te begrijpen, keek ik naar de publieke teksten en toespraken van overheidsinstellingen om te zien hoe zij daarin AI definieerden. Om AI te begrijpen als een cultureel artefact dat op verschillende manieren kan worden geïnterpreteerd, keek ik naar het werk van kunstenaars en MUIS die verschillende toepassingen van AI voorstellen. Om AI als archief te lezen, liet ik mijn gesprekspartners de teksten van ChatGPT annoteren om te onderzoeken hoe het de teksten in zijn database reproduceert. Ten slotte, om AI als infrastructuur te ervaren, wandelde ik met mijn gesprekspartners in en door zowel zichtbare als elektromagnetische onderzoekslocaties om te speculeren over waar AI zich daar bevond. Samen vormen deze onderdelen een samengesteld, zij het altijd gefragmenteerd beeld van AI zoals het zich voordoet in het dagelijks Singaporese leven. AI is een technologie die het overheidsbeleid, het geschreven woord, de geluidslandschappen en zo ook onze toekomst vormgeeft, maar waarbij zij als vormende factor in veel opzichten vreemd genoeg onzichtbaar blijft. Deze methodologieën waren erop gericht AI weer tastbaar te maken waar zij doorgaans zich zichtbaar verscholen houdt.

Deze methodologie leidde tot drie belangrijke bevindingen. 1.) Hoewel AI een nieuw aspect is van het Singaporese bestuur, wordt het gedreven door oude angsten in Singapore. Met name economisch overlevingsdrang, waarbij de economie boven alle andere prioriteiten wordt gesteld en de vermeende kwetsbaarheid van Singapore als kleine natie omringd door grotere landen wordt daarbij benadrukt. AI wordt gezien als een uiting van deze angst, omdat het een industrie is die geen toegang tot natuurlijke hulpbronnen of arbeidskrachten nodig lijkt te hebben. 2.) Dit verhaal, waarin de buurlanden van Singapore als een bedreiging worden gezien, sjipt door tot in MUIS, waar men zich vooral bezighoudt met het waarborgen dat Singaporese moslims hun opvatting van de islam volgen. Dit is een gevolg van de historische positionering van moslims als een interne bedreiging voor de stabiliteit door de staat, vanwege hun gedeelde raciale banden met de moslimmeerderheid in Maleisië. AI belooft dit probleem op te lossen vanwege het vermeende vermogen om kennis te centraliseren en, in het geval van MUIS, religieuze kennis. 3.) Tot slot ontdekte ik dat AI de neiging had deze narratieven en angsten in zijn output te repliceren. Dit komt doordat AI altijd voor het gemiddelde gaat en daardoor vooringenomen ideeën over de moslimgemeenschap in haar datasets herhaalt die sinds de jaren 60 in Singapore al wijdverspreid zijn. Mijn gesprekspartners konden deze vooringenomen verhalen herkennen

bij het annoteren van door ChatGPT gegenereerde tekst, zelfs wanneer deze teksten op het eerste gezicht onschuldig leken.

Ondanks de alomtegenwoordigheid van deze toekomstverhalen, concludeer ik dat de moslims die ik in Singapore ontmoette, deze door de staat en via MUIS en AI gepropageerde toekomstbeelden verwierpen. Sommige Moslims deden dit door terug te grijpen naar een verleden dat niet dominant voorkomt in de verhalen die te vinden zijn in het AI-archief of in de staatsrepresentaties. Dit alternatieve verleden schetst een Maleisië niet als een direct gevaar, maar als een eens geliefde die los is komen te staan van Singapore; een gemeenschap als onvolmaakt maar warm, in plaats van een destabiliserende kracht en gevaar voor de Staat; de islam als een syncretische praktijk, die de tweedeling tussen goede en slechte moslims overstijgt, om er maar een paar te noemen.

Welke alternatieve toekomstbeelden stellen moslims zich dan voor in een Singapore dat gedomineerd wordt door AI-technologieën? Ze zijn vervaagd, talrijk en slechts een handvol ervan is in dit proefschrift aan bod gekomen. Bijgevolg verwerpen ze allemaal de uitgesproken en uitsluitende toekomstbeelden die worden voorgesteld door de Singaporese staat, de PAP en de door AI mogelijk gemaakte Smart Nation. Ik noem dit proces het “vervagen van de toekomst”, waarbij de zekerheid over de toekomst wordt ondermijnd door alternatieven aan te dragen.

Een belangrijke beperking van mijn onderzoek was de timing ervan. Hoewel large Language Models (LLM's) in 2023, toen ik mijn veldwerk deed, groot nieuws waren, was het gebruik ervan door het grote publiek nog niet wijdverspreid. Mijn gesprekspartners wisten vaak veel over AI, maar de meesten gaven aan dat ze LLM's zoals ChatGPT slechts één of twee keer hadden gebruikt, en nog minder hadden ze hen in een religieuze context ingezet. Ook MUIS was pas net begonnen aan haar AI-project, de AI Fatwa Bot, en ik ontmoette het ontwikkelingsteam pas in mijn laatste weken in Singapore. Wat er met dat project gebeurt, zal zeker een aanzienlijke invloed hebben op de toekomst van de moslimgemeenschap in Singapore. Of dat ten goede of ten kwade zal zijn, valt nog te bezien, en toekomstig onderzoek naar dit onderwerp zou een waardevolle aanvulling zijn op dit proefschrift.

Omdat ik er vroeg bij was, kreeg ik zelden de kans om mijn gesprekspartners met AI-systemen te zien werken. Er werd in die tijd nog niet veel gesproken over processen als “kritische prompt engineering” in

Singapore, en wat er wel over gesproken werd, was nog niet echt doorgedrongen tot het leven van mijn gesprekspartners. Daarom richt mijn onderzoek zich meer op de manier waarop ChatGPT en AI-systemen meer in het algemeen werden ontvangen. Wat ik hier presenteer, is wat ChatGPT destijds deed, niet wat gebruikers er potentieel mee zouden kunnen doen, hoewel dat laatste wel interessant toekomstig onderzoek zou opleveren als aanvulling op hoe gebruikers omgaan en invulling geven aan toekomst door AI.

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CURRICULUM VITAE

James McGrail was born in Brent, The UK, on May 12, 1994. Between 2005 and 2012 they attended John F. Kennedy Roman Catholic Secondary School, where they received three A-levels. Between their graduation from secondary school, and enrolling in university, they volunteered in Sierra Leone, and worked as a Mental Health advocate for the UK charity Time to Talk. In 2015 they enrolled in the Study of Religion at SOAS University of London. There they received a first-class degree, and their thesis on the role of social media filter bubbles on Islamophobia in the UK won the award for best Undergraduate thesis. During their degree, they conducted several internships including working on the BBC documentary “My Stolen Childhood” which won the AIB Award for best Human-Interest documentary. After graduating in 2018, they worked at the women’s legal rights charity Equality Now as press assistant for the Middle East and North Africa. In 2019, they enrolled in the Master programme in Cultural Anthropology and Development sociology at Leiden University. There they received Leiden University funding to conduct fieldwork on the transition to adulthood of young men working for Uber in Accra, Ghana. For this project they graduated cum laude in 2020. After graduation, they produced the 8-part podcast “Notes from the Field Desk” which has received thousands of listens. In 2022, they began their PhD trajectory at Leiden University as part of the NWO funded One Among Zeroes research project within the department of Cultural Anthropology and Development Sociology. During the PhD, James spoke at several international conferences, and published their article “Act Blur, Live Longer: Muslim Artists Blurring the Categories of Singapore’s Smart City” in the journal Cultural Anthropology.

Blurring the Future

AI Regurgitation and the Singapore Muslim Community

by James McGrail

In 2014, the Singaporean state began its Smart Nation project with Data Spark: a collaboration with the state-owned telecoms company Singtel. The project placed thousands of cameras and sensors around the city, in order to create a data feedback loop which could inform government policy. Since 2017, with assistance from Japanese tech conglomerate NEC, these cameras have been equipped with AI-enabled facial recognition software. In the intervening years, this network has expanded. By 2030, the Singaporean police aims to have 200,000 cameras across the Island. The state positions itself as a testbed for techno-governance, and a hub for AI in Southeast Asia. The Singaporean state imagines its future as one where technology and data feedback loops ensure the smooth functioning of government policy.

Situated Within this wider techno-governance milieu is MUIS, the Islamic Religious Authority.

As a statutory board, MUIS has close ties to the ruling PAP (People's Action Party). Consequently, the religious authority often find themselves acting as intermediaries between the State and the Singapore Muslim Community. This position can be fraught given the governments historical marginalisation of the Muslim community. MUIS, therefore, represents a site where the governments techno-futurist imaginaries come into contact with the messy reality of people's everyday lives. This thesis arises from this tension, explores how MUIS takes up government- promoted AI technologies for religious governance, and examines how these technological innovations are received by Singaporean Muslims.

Throughout this thesis the author asks, "What futures are imagined by Muslims in a Singapore dominated by AI-enabled technologies?"