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Blurring the future: AI regurgitation and the Singapore Muslim community

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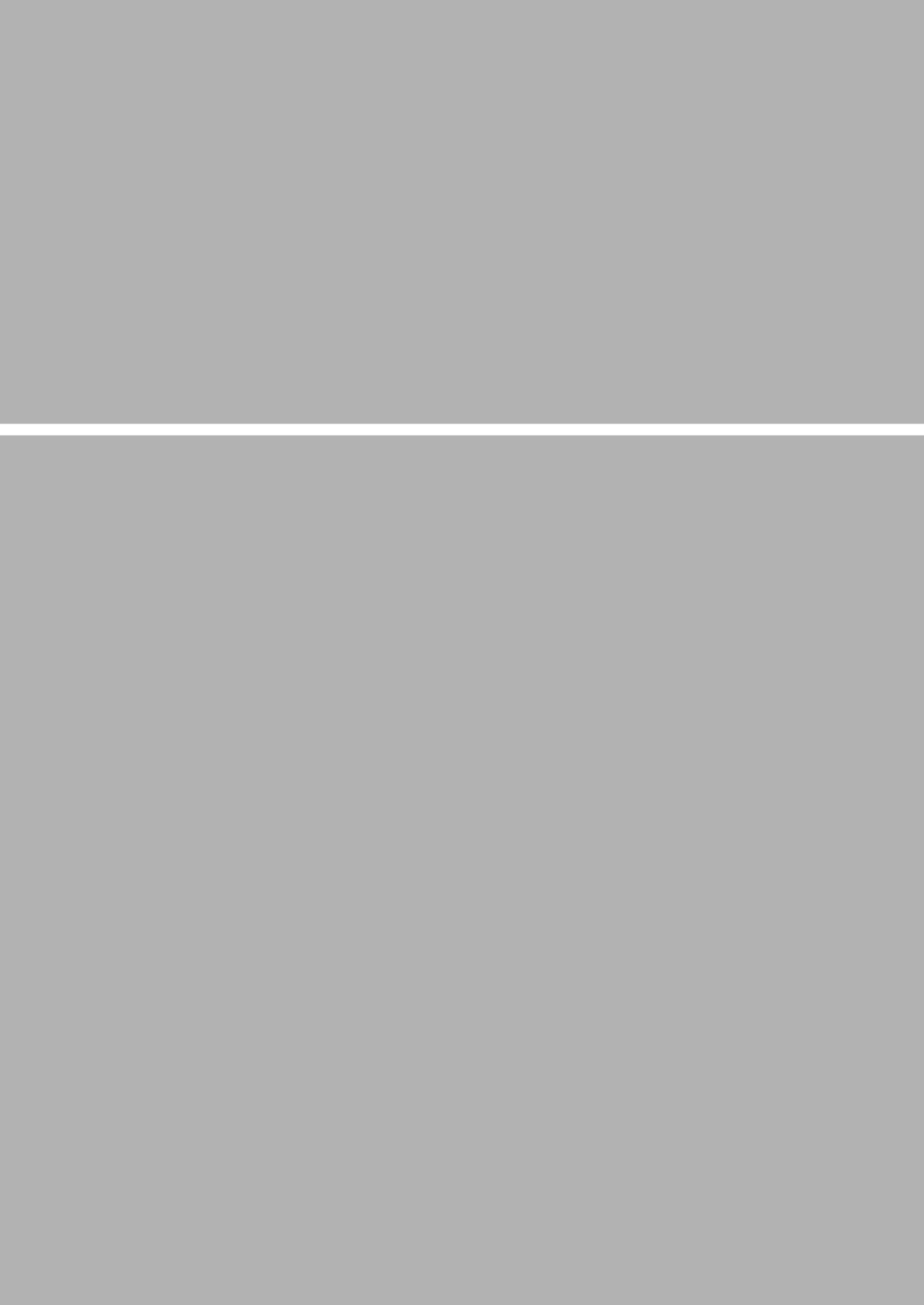
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Chapter 1

**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, madrasa, 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 State 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.