



**CULINARY BIOGRAPHIES:
CHARTING SINGAPORE'S
HISTORY THROUGH COOKING
AND CONSUMPTION**

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1. Executive Summary

Culinary Biographies is a two-year collaborative research project that examined Singapore's intangible food heritage from a *longue durée* perspective. Between October 2018 and October 2020, Singapore's documented 700-year history was surveyed, tracing the pathways through which ingredients, culinary techniques and regional culinary philosophies converged in Singapore. We found that many of these conjunctures established crucial precedents for some of Singapore's most iconic food offerings.

Our investigation focused on seven case studies: betel quid, biryani, fish head curry, ice kachang, laksa, Milo Dinosaur and home cooking. The case studies combined a focus on the development of cuisine in Singapore with the premise that all food items have socially embedded 'lives' that change over time.

The project examined the everyday historical context in which Singapore's cuisines emerged and evolved in three main areas: (1) the diversity of locations where each offering and its predecessors were prepared; (2) the knowledge and practices of their creators and consumers; and (3) each case study's underlying material realities, including the specific physical qualities of each food item, as well as technological and economic infrastructures underpinning preparation and consumption. In doing so, our framework helps consolidate understandings of how tangible and intangible heritage can be mutually reinforcing.

Our study makes three key contributions to the dialogue surrounding Singapore's food history and heritage:

- Singapore's food offerings are **multi-layered historical artefacts** that resist cultural ownership and monopolisation.
- Food history offers an **accessible** yet **nuanced** avenue for recovering a **people's history** of Singapore.
- From a 700-year perspective, Singapore's iconic edibles were most heavily influenced by **creative** and **destructive** forces during the **twentieth century**.

The study offers two main recommendations for heritage programming in Singapore:

- **Physical spaces** rich in food heritage should be more integrated with ongoing **digitisation** efforts. **QR codes** can be added to existing heritage signage, widening access to historical narratives on Singapore food in the online world.
- Heritage trails should incorporate **scalable approaches** that involve explicit links between historical eateries, related markets, and food production sites. Such multi-layered **'food chain' pathways** can be combined with living heritage tours to showcase other aspects of Singapore's national food culture, including food security.

2. Research Background, Objectives and Scope

a. Objectives and scope

This collaborative project was the first to attempt an examination of Singapore's food heritage from a *longue durée* vantage point. To date, most academic research on Singapore-based cuisine has been contemporary in focus and led by the social sciences and heritage specialists. More historically oriented studies of Singapore food have been largely confined to relatively discreet aspects of food culture, such as specific types of eateries, geographic enclaves and circumscribed sociohistorical texts. Our study deliberately embraced a broader array of themes, items, chronologies and change drivers, in order to arrive at a more synthetic understanding of Singapore's long-term food history until the present day.

The scope of our enquiry forms the basis of three key questions:

- i. **How did some of Singapore's most popular food items develop?**
- ii. **How have people from all walks of life shaped Singapore's food history?**
- iii. **Why have some food items become more popular than others in Singapore?**

Detailed responses to each of these questions can be found in the **Section 4** (Main Research Findings).

b. Strategy

To address these questions with sufficient depth within the two-year timeframe designated by NHB, we adopted a commodity-focused research strategy from the outset. The fundamental premise behind our study is that all edibles have their own socially embedded lives that change over time. They are thus richly textured historical entities (Kopytoff, 1986; Laudan, 2013). Bonny Tan's pioneering studies of the histories of curry puffs and *belachan* in Singapore (2014) were instructive in this regard, demonstrating how a deceptively narrow enquiry into the histories of two specific food items could shed new light on past ingredients, preparation methods, sensory knowledge, shifting notions of ethnicity, class, gender roles, imagined modernities, technological transformations, local urban geography and Singapore's relationship with the wider world. The culinary biography approach is thus particularly well suited to historicising Singapore's intangible food heritage.

Our investigation, in turn, focused on the culinary biographies of seven case studies: (1) betel quid, (2) biryani, (3) fish head curry, (4) ice kachang, (5) laksa, (6) Milo Dinosaur and (7) home cooking. Each case study was handpicked to cover a specific cross-section of Singapore's food culture.

The following factors were borne in mind during initial case selection:

- Ethnic affiliations and hybridity.
- Coverage of alimentary core building blocks: starchy staples (e.g., rice, noodles), meat, fish, fruits, and vegetables.
- Meal structures: one-plate meals, centrepiece dishes, desserts, and drinks.
- Currently endangered vs. currently popular edibles.
- Sites of preparation and consumption: domestic, public, and commercial.
- Availability of known historical sources.

For each case study, the research team paid systematic attention to important factors revolving around four interlinked themes:

- **Culinary geographies:** where specific dishes and their antecedents originated, links between different kinds of food spaces, reasons for shifting loci of preparation and consumption.
- **Culinary labour, knowledge, and enterprise:** the people responsible for food offerings, knowledge acquisition and alteration processes, lived realities and social interactions.
- **Cooking's material realities:** changes in dish construction over time, data on changes in ingredients, cooking equipment, and techniques. More importantly, the underlying social, political, economic, and technological transformations driving these changes.
- **Consumers and consumption:** the identities and social backgrounds of food consumers, reasons behind changing perceptions of cuisine, associated dining etiquette, the roles played by public policy, media and advertising, sites of consumption, and associations with nationhood and culinary nationalism.

This cumulative strategy enabled significant meta-analysis within the timeframe of the project, including cross-fertilization between case studies. The primary aim was to distill holistic insights greater than the sum of the individual cases themselves (see **Section 4**).

c. Deliverables

Our research strategy facilitated the timely construction of historical case studies that were regularly disseminated to public audiences during and after the project's official duration.

Here is a list of all research outputs stemming from the project to date:

i. Open-source public articles:

- Geoffrey K. Pakiam, Gayathrii Nathan and Toffa Abdul Wahed. "Milo Dinosaur: When Southeast Asia's Cultural Heritage Meets Nestlé." *ISEAS Perspective*, no. 89 (24

- October 2019) (Link: https://www.iseas.edu.sg/images/pdf/ISEAS_Perspective_2019_89.pdf)
- Geoffrey Pakiam. "A Fresh Look at Fish through a Brief History of Fish Head Curry." *Berita* (Winter 2019/2020): 5-10 (Link: <https://ohioopen.library.ohio.edu/cgi/viewcontent.cgi?article=1045&context=berita>)
 - Fiona Lim and Geoffrey Pakiam. "A Bite of History: Betel Chewing in Singapore." *BiblioAsia* 16, no. 3 (Oct–Dec 2020): 4–9 (Link: <https://biblioasia.nlb.gov.sg/vol-16/issue-3/oct-dec-2020/betel-chewing>)
- ii. Public history talks:
- Geoffrey K. Pakiam. "HistoriaSG: Far From Extinct? A History of the Milo Dinosaur in Singapore." Public talk at the National Museum of Singapore, 14 September 2019 (Video: <https://www.youtube.com/watch?v=Y2bFSfDXIII>) (Transcript: <https://www.nhb.gov.sg/nationalmuseum/-/media/nms2017/documents/historiasg-transcripts/historiasg-lecture-6-14-sep-2019--geoffrey-pakiam-final.pdf?la=en>)
 - Alecia Neo, G. T. Lye and Geoffrey Pakiam. "Chew on This: Discussions and Collaborations – Hospitality and Food Rituals Panel Discussion." Livestreamed by the Asian Civilisations Museum, 27 June 2020 (Permalink: https://www.facebook.com/watch/live/?v=2326301937673031&ref=watch_permalink)
 - Geoffrey K. Pakiam. "Predicaments and Payoffs When Researching Local Food History: Towards a Culinary Biography of Fish Head Curry." Lunch & Learn Series, Environmental Studies Programme, Yale-NUS College, 11 November 2020. Hybrid format. In-person at Saga Common Lounge + Zoom Link: <https://yale-nus-edu-sg.zoom.us/j/83112700597>
- iii. Additional outputs not originally proposed as deliverables (as of 18 October 2020):
- Geoffrey K. Pakiam. "An Economic History of Milo Dinosaur [provisional title]." Manuscript in progress, for submission to *ILAS Newsletter* by December 2020

3. Methodology

a. Team profile

The broad scope of *Culinary Biographies* necessitated a collaborative approach from individuals with complementary skillsets and language facilities. The latter was especially important given the multilingual nature of our source base. Besides English-language material, we engaged with a wide variety of documents in Jawi, Romanised Malay, simplified Chinese characters and Tamil. Similarly, the oral history interviews conducted by team members required some familiarity with conversational Teochew, Cantonese, Hokkien, Mandarin, Malay, Tamil and some Malayalam. Here, however, we could also occasionally rely on family members of interviewees to help with simultaneous translations.

Our research team comprised the following nine individuals who contributed to the project for varying lengths of time:

Name	Position	Affiliation	Non-English Languages Used	Duration
Dr Geoffrey K. <u>Pakiam</u>	Principal Investigator	ISEAS-Yusof Ishak Institute	Malay	Oct 2018 – Oct 2020
Mr Michael <u>Yeo</u> Chai Ming	Co-Investigator	NTU/Oxford University	Mandarin	Oct 2018 – Oct 2020
Dr <u>Loh</u> Kah Seng	Co-Investigator	University of Western Australia	Mandarin, Hokkien	Oct 2018 – Jan 2020
Ms Gayathrii <u>Nathan</u>	Research Assistant	Independent Scholar	Tamil	Nov 2018 – Oct 2020
Ms <u>Toffa</u> Abdul Wahed	Research Assistant	Independent Scholar	Malay (inc. Jawi)	Nov 2018 – Oct 2020
Mr Walter <u>Boo</u> Keng Hua	Research Assistant	Yale-NUS College	N/A	Dec 2018 – Apr 2019
Ms <u>Phoon</u> Yuen Ming	Research Assistant	NUS	Mandarin, Cantonese	Jan 2019 – Oct 2020
Ms <u>Young</u> Wei Ping	Research Assistant	Independent Scholar	N/A	Dec 2019 – Oct 2020
Ms Fiona <u>Lim</u> Pei Wen	Research Assistant	Independent Scholar	N/A	May 2020 – Oct 2020

We also benefited from the support of many other individuals and institutions during the period of research (see **Section 7: Acknowledgements**).

b. Historical sources

The *Culinary Biographies* team consulted a very wide variety of historical sources.

i. Unpublished sources

The team collected and, where time permitted, annotated relevant materials on food history from the following:

- Annual reports of the Fisheries Department in the Colonial Office (CO) archives, CO 275 (Straits Settlements Sessional Papers 1855–1940), as well as Annual Fisheries Reports between 1948–1960, all stored in either soft or hard copy formats at various institutional repositories in Singapore.
- Annual reports of the Primary Produce Department, 1960–1969
- Official correspondence from files of the Ministry of Environment, Hawkers Department, deposited at the National Archives of Singapore (NAS)
- Oral history interviews deposited with the NAS

The *Culinary Biographies* team also conducted new oral history interviews with Singapore-based individuals who were either known to be home cooks in the past, or had significant experience consuming or preparing edibles connected with our dish-specific case studies. Many interview contacts were obtained through word of mouth and snowballing techniques.

Several interviewees also approached the team in response to a *Straits Times* feature on 28 September 2019, entitled ‘Whatever happened to betel chewing?’ (link to paywalled version here: <https://www.straitstimes.com/singapore/whatever-happened-to-betel-chewing>; for full article, see **Section 10: List of Appendices**). The piece was authored after the team had spoken with *Straits Times*’ Heritage Correspondent Melody Zaccheus regarding the scope of our project and progress to date. The article contained a call for long-time and former betel chewers to shed further light on the practice, as well as those who had cooked at home before the 1990s.

We interviewed a total of 22 individuals:

1. Kamisah binte Adan (home cooking, including biryani)
2. Lee Kwai Yoong (home cooking)
3. Vasanthara Devi (home cooking, memories of betel chewers)
4. Mohana Anba (home cooking)
5. Tan Ah Kok (home cooking)
6. Eileen Kiong (home cooking, including laksa)
7. Doris Teo (home cooking)
8. Lilian Teo (home cooking)
9. Loh Choe Jin (home cooking)
10. K. Narayani (home cooking, including biryani)
11. Kung Chien Wen (Dr) (memories of Milo and Milo Dinosaur)
12. Syamala Senan (home cooking, memories of betel chewers)

13. Chong Tack Mien (home cooking)
14. Irene Lim (home cooking, memories of laksa, betel chewers)
15. Ho Yin Peng, Jean (home cooking)
16. Chua Jun Yan (home cooking)
17. Meenakshy Narayanan (home cooking, memories of betel chewers)
18. N. Narayanan (home cooking consumer)
19. Radhika Narayanan (food memories)
20. Aida Wong (home cooking)
21. Zaiton binte Abdul Rahman (home cooking, including laksa)
22. G. T. Lye (betel chewing, memories of chewers)

The oral histories of those who had significant experience with home cooking offered not just a polyphonic historical narrative of domestic cookery in Singapore, but the glimpse of an alternative family-centred social history of Singapore from the 1940s until the present day.

- The interviews showed home cooking to be inextricably entwined with class, gender, maternal and cultural identities throughout history.
- Recounted memories of home cooking also demonstrated what were otherwise publicly invisible storehouses of knowledge, know-how and creativity.
- The interviews highlighted a range of perceived values of home food production over time, changes in consumption patterns, and different practices of commensality in home settings.
- These features will be elaborated further in the main findings (**Section 4**). A more detailed account focused exclusively on the findings from home cooking interviews can also be found in **Section 10, Appendix 1: Report on oral history interviews**.

ii. Published sources

Besides unpublished historical sources, the team also spent much time locating and annotating a broad range of published material, both text- and non-text based. In general, relevant material on Singapore's food history is widely available but extremely fragmented. There is thus inherent value in tracing and consolidating this information, but it is a time-consuming endeavour. The sources were vital for providing important social context as well as details regarding historical food culture – including sensory knowledge – surrounding the case studies. These sources included:

- Thousands of newspaper articles discussing specific food items and food technologies, in English-, Malay- and Chinese-language media. Tamil-language newspapers were excluded for reasons of practicality (also see **Section 3c: Challenges faced**)
- Dozens of historical cookbooks for Malayan and Singapore audiences. We mostly focused on material between the 1920s and 1980s, in both English and Malay (including Jawi).

- Malay- and Chinese-language manuscripts, including the *Sejarah Melayu*, and *Hua Yi Tong Yu* (華夷通語). The latter is a Chinese-Malay dictionary published in 1883.
- Government publications and 'grey' literature (various trade and quasi-scientific periodicals, student theses).
- A small selection of memoirs, travelogues, fiction and popular magazines, particularly *Fesyen*, a Jawi-language periodical published from the 1950s onwards.
- At NAS, photographs of betel chewing culture, fish markets, ice desserts, laksa vendors, street meals, domestic kitchens, and cooks, spanning the late nineteenth and twentieth centuries.
- Films of Singapore, both documentary and fictional, containing scenes of street food, home preparations and examples of some case studies, such as ice kacang. These include *The City of Singapore* (1910), *My Oriental Friends* (1933), *Samarang* (1933), *Rayuan Sukma* (1951), *Sejoli* (1951), *Anak-ku Saçali* (1956), *Bujang Lapok* (1957), *Taufan* (1957), *Sumpah Pontianak* (1958), *Bawang Puteh* (1959) and *Pendekar Bujang Lapok* (1959). Most appear to have been produced during Singapore's 'golden era' of Malay cinema.
- A large selection of secondary literature, particularly works that touched on pre-colonial Singapore's trade networks, and nineteenth- and twentieth-century Singapore food culture.

The following chart (**Figure 1**) provides a rough sense of how the team allocated their labour across this wide range of material:

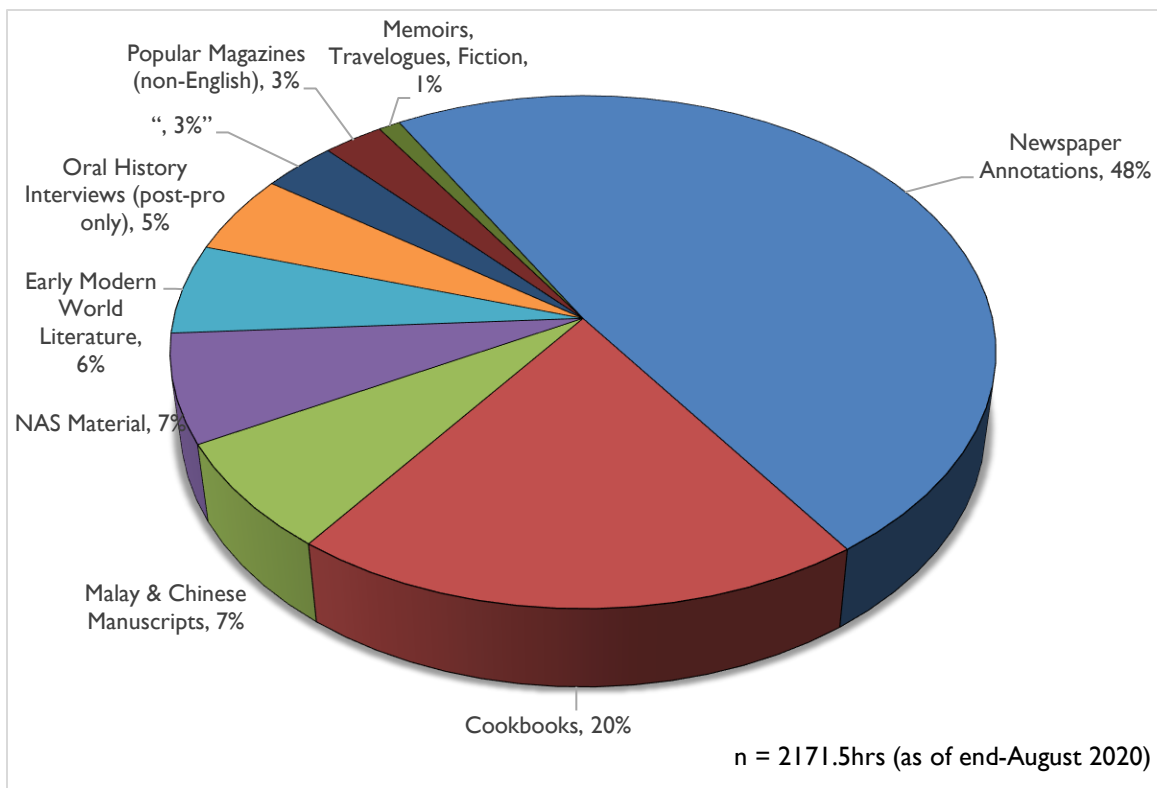


Figure 1. Estimated proportion of time spent by research assistants consulting and annotating various types of historical sources, Nov 2018–Aug 2020

The chart offers a very conservative estimate of overall time expenditures, as it does not include other core aspects of research work, such as project management. In particular, the Principal Investigator and Co-Investigators spent many hours analysing data, and preparing for oral history interviews, public talks and public-history articles.

Nonetheless, the chart helps to show the importance of newspapers for reconstructing food history, particularly for the twentieth century. The National Library Board's digital newspaper archive (<https://eresources.nlb.gov.sg/newspapers/>) was very useful in this regard.

c. Challenges faced

The primary challenge for our study was to avoid 'drowning' in sources. Even after restricting our research scope to the seven case studies, rather than a broad survey of Singapore food history, there was a mountain of material to examine. The team could have but chose not to spend much time looking at material covering the period after the 1980s, except where it overlapped with narratives of older eras (as in the case of some of our oral histories). We did not focus as much on memoirs and travelogues as we would have liked, particularly those from the nineteenth century. Nor were we able to sample a sufficiently wide range of early modern Malay-language manuscripts that would have provided further regional context for better understanding pre-colonial Singapore's food culture. We also did not examine home economics textbooks, another potentially useful primary source on perceptions of home cooking and changes in dishes over time. Old restaurant menus and other ephemera, housed at Singapore's Heritage Conservation Centre, were another promising group of sources that we were unable to consult due to time constraints.

Time pressures were complicated by other issues. While accessible from remote locations, NLB's digital newspaper resources required considerable skill and patience to navigate. Keyword searches across the entire span of digital holdings typically generated thousands of relevant hits. Results could be truncated by using more specific search terms or time periods, but at the risk of missing crucial articles.

Food-specific keyword search terms posed considerable challenges, due to the sheer number of alternative spellings. For example, we learnt nine different ways to spell *biyani* in romanised lettering alone, but only after having gone through newspaper material and other sources for an extended period. A list of the keywords and search parameters that were used during research can be found in the newspaper annotations listed in **Section 10**.

We also found during our research that NLB's text recognition engine occasionally did not recognise crucial keywords in some articles. The text could be read with human eyes, but not

through proprietary software, possibly due to the bad quality or poor positioning of the underlying material that was scanned beforehand. This suggested that a considerable number of articles with relevant material were not picked up by the search engine. Browsing remained possible but was even more time-consuming.

Moreover, our access to some Malay- and Tamil-language digitised newspaper sources was significantly constrained by the lack of keyword-searchable access at NLB. Once technology permits, *Tamil Murasu* in particular should be rendered searchable, as it is the only Tamil-language Singapore newspaper source that covers a virtually continuous period from before the Second World War to the present day.

Access to relevant official correspondence at the National Archives was challenging. The team's efforts to consult 1970s-era files from the Hawkers Department was time-consuming, requiring multiple forms of clearance from the relevant agency. The complex effects of street food vendor settlement and resettlement on Singapore's public food culture remain underexplored. These include changes in material, technological and social realities when mobile kitchens moved from streets to fixed collective settlements. Such realities form a vital counterpart to popular memories of street food and their remembered tastes. The newspapers we surveyed provided fragments of relevant information, but archival documents from the period should be made available and more easily accessible to gain a more holistic understanding of this important period in Singapore's history. As the relevant files approach the half-century mark, the case for greater access grows stronger.

Finally, the team faced some difficulty obtaining interviews with betel chewers and long-time Singapore home cooks. In the case of the former, the main problem was that most actual practitioners had already passed on. In the case of the latter, concerns about privacy and possible criticisms of cooking practices might have been at play.

4. Main Research Findings

This section analyses the chief findings from our two-year project. Three major themes are floated and each discussed in turn:

- a. How have some of Singapore's most popular food items developed over time?
 - b. How have people from all walks of life shaped Singapore's food history?
 - c. Why have some food items become more popular than others in Singapore?
-
- a. Singapore's food offerings are historical artefacts that resist cultural monopolisation

i. Asking the right questions

If we were to ask when X dish was first invented, or by whom, we would almost certainly fail to elicit an interesting or useful response. Not without much more context, anyway. Even if there was a particular person in time whom we could agree to credit such a monumental achievement to, questions about authorship miss the bigger point about how food cultures change over time.

Food history in general can be thought of as a process of stops and starts, of incremental changes, often with cumulative effects. Like language itself, the construction of cuisines has been practised in an informal, organic manner for most of history, replete with borrowings, accretions, and discards. There are certainly landmark conjunctures in food history, but no single date or site can provide a narrative that credibly acknowledges the historical complexity of cuisine, including the flows of knowledge and practices that enable cuisines to travel vast distances and transform over time (Laudan, 2013).

In our case studies, for example, we have encountered three different kinds of historical dynamism.

In the first category are **edibles whose formal appearance predates the founding of modern Singapore** in 1819. These offerings include **betel quid (*sirih*)**, **laksa** and **biryani**. There are certainly documentary (and in the case of betel chewing, archaeological) records that demonstrate associated culinary practices dating back hundreds or even thousands of years across Asia. But these records are by their nature highly fragmentary and imprecise. It is similarly difficult to place an accurate date on when these edibles first entered Singapore from abroad, given the lack of regular documentation of edibles in their *prepared* form, often in the privacy of a home. Any such claims are speculative at best (see **Section 5: Edible Timelines**).

The second category belongs to offerings of seemingly more recent origin, such as **fish head curry** and **Milo Dinosaur**. These edibles have been subjected to **relatively precise claims about their origins**. Here, the more recent past is better documented, and those who claim to have created these dishes are often still around to substantiate their claims in person (or through surviving family members).

This sense of precision, however, stems primarily from the labelling and marketing of the edibles themselves, rather than their underlying preparation. **Fish head curry**, defined here as the large head of a fresh fish served in a spicy sauce, has a longer and more complex history than that attributed to its currently best-known initiator, Marian Jacob Gomez, the proprietor of a restaurant on Sophia Road in the early 1950s (see **Section 5**). Similarly, **Milo Dinosaur**, a modified milkshake supposedly created in the mid-1990s by the staff at several Singapore-based Indian Muslim open-air eateries, was already being prepared and enjoyed by Milo-consuming families at home in Singapore and abroad for decades beforehand, without it being called as such (Pakiam, Nathan, and Toffa Abdul Wahed, 2019). In both cases, the original impetus to claim authorship over a particular dish stemmed from commercial and professional imperatives.

That being said, authorship claims do not equate to ownership, as it is generally very difficult to award and enforce intellectual property rights for most recipes. What authorship claims tend to do, though, especially in contemporary commercial settings, are to increase the relative prestige and ‘authenticity’ of their dishes, presumably in the interests of profit. Documenting and disseminating the complex historicity of a dish can help produce the opposite effect, helping to water down singular authorship claims, and thus democratise food culture to a certain extent.

This brings us to a third category of edibles: those with **significantly documented gestation periods**. In these cases, we were able to trace the development of a dish through the convergence of different ingredients and preparation techniques, from early ‘prototypes’ to increasingly ‘refined’ formats, typically over a span of decades, if not centuries. To some extent, all dishes in general potentially fall under this category, subject to available sources. But among our case studies, **ice kachang** and **Milo Dinosaur** offer the best opportunities to demonstrate this trajectory, since the underlying sources enable us to chart many of the diverse social and material circumstances which allowed for their development during the twentieth century’s first half (ice kachang) and second half (Milo Dinosaur) (see **Section 5**)

ii. Unpacking how dishes are localised

Although it might seem desirable to create a master inventory that traces the arc of every known dish’s historical development in Singapore, this is neither practical nor necessary for building a greater degree of historicity into Singapore cuisine. Instead, documenting a wide range of episodes where (1) different dishes have been altered in the past, in terms of their

underlying ingredients, preparation techniques, presentation format and associated meaning; (2) tracing the underlying reasons for these changes; and (3) categorising them by different themes, can also provide valuable insights into key moments of dynamism and hybridity in Singapore's historical food culture.

One major way that incremental change occurs over time is when individuals adapt 'traditional' dishes to suit their own taste preferences. This can be due to personal reasons, cultural differences, health concerns and other intangible factors.

Differing sensory preferences sometimes played a big role in changing preparation methods. Ms K. Narayani, who began cooking for her family as a teenager in the early 1950s, eventually learnt how to prepare *ayam masak merah* with her own twist:

She asked for the recipe for *ayam masak merah* from Malay ex-colleagues in Singapore. It was taught to her that the chicken should be seasoned with ginger and garlic and then fried until 'hard' before adding it to the sambal. But she found the chicken to be too hard as a result, so she adapted the recipe. Until today she pan-fries the chicken instead of deep-frying it. (Notes from interview with K. Narayani, 1 Aug 2019)

Culinary change could also be motivated by a desire for play and experimentation. This was particularly true for those whom sociologists have labelled as 'keen cooks', as opposed to 'traditional', 'family-centric' or 'drudge' cooks (Rawlins and Livert, 2019). Our research found that those who cooked regularly tended to straddle these ideal types, but were inclined in one direction more than others at different points of time in their lives.

From our team's interview with Ms Meenakshy Narayanan, for instance, we learnt that she had been cooking for her immediate family in Singapore since the late 1950s, not least because the family's strict adherence to their Keralan upper-caste Hindu background made it difficult for the family to eat out on a regular basis. Because of the family's dietary restrictions, Ms Narayanan's role as the home cook was especially crucial, making her the primary gatekeeper for the family's food consumption. Although one might assume such circumstances consolidated Ms Narayanan's inclinations as a 'traditional' and 'family-centric' home cook, in her interview she demonstrated great pride in the more experimental aspects of her 'keen' nature:

She talks of one dish with no name that she invented herself as a side-dish some twenty-five years ago, a modified version of *keerai moolagootal* [a mildly-spiced vegetarian curry preparation popular with strict Brahmins], using spinach, coconut and dal, no tamarind, no chilli, and instead *taugay* [her own words] and fried tofu. She had been inspired by her previous experience learning to cook *mee goreng* from her Malay-Javanese domestic worker, to whom she had also taught 'traditional' Indian cooking. (Notes from interview with Meenakshy Narayanan, 7 Oct 2019)

While her energetic and inquisitive personality undoubtedly played a role in such culinary exchanges, Ms Narayanan's habits were also conditioned by the family's physical location. For nearly 30 years between the 1960s and 1990s, the family lived in what they described as a tightly knit, multi-ethnic community in a private housing estate at Haig Road.

She learnt to make 'Gujarati dishes', including *chappati*, from a neighbour of Gujarati origin living in a unit upstairs. The children of both families would visit each other's homes. She also learnt Sindhi cooking from her other neighbours. Her daughter Radhika described the setting as 'like a little village'. She remembered the children enjoying themselves there, growing up. (Notes from interviews with Meenakshy Narayanan and Radhika Narayanan, 7 Oct 2019)

Moreover, although fortunate enough to have located and hired a sufficiently skilled domestic worker to assist her with the daily cooking from the late 1960s onwards, Ms Narayanan's choices were still circumscribed by the regional geography from which servants in Singapore tended to come from at the time. Her family eventually employed a Javanese domestic worker, from whom Ms Narayanan learnt the Malay language over time. Indeed, many of Ms Narayanan's social interactions in the 1960s and 1970s were significantly influenced by Malay culture, largely (but not solely) due to her cooking responsibilities:

Meena's first daughter was already studying Malay in school in late 1960s as it was compulsory at the time. Meena's grocery shopping and marketing required using Malay terms all the time, so she had no choice but to learn the Malay names for items, like different vegetables. She took it upon herself to learn Malay with a dictionary, with some help from her domestic worker. But Meena did the shopping herself. (Notes from interview with Meenakshy Narayanan, 7 Oct 2019)

iii. Culinary infrastructure: Linking intangible practices with tangible spaces

Location and physical space are thus central to a deeper understanding of how cuisines are assimilated, renamed and physically altered over time. Food historians have recently coined the term 'culinary infrastructure' to encompass the ensemble of spaces, technologies and immaterial practices that organise and convey knowledge about food production and consumption (Pilcher, 2016). Culinary infrastructure includes material aspects such as eateries, transport networks, marketplaces, ports and refrigeration, as well as embodied expressions of knowledge in the form of recipes, cooking practices, quality certifications and even health regulations.

The case of fish head curry in Singapore helps to illustrate some of these complex interactions between society and space in local culinary infrastructure, and their impacts on historical culinary practices. Journalists and writers to date have credited Marian Jacob Gomez, a

Malayalee from Kerala, with inventing the dish shortly after he established an eatery along Singapore's Sophia Road in 1949. In these accounts, Gomez decided to blend an item thought to be popular with local Chinese gourmards – an imposingly large fish head – with his more traditional Keralan-influenced curries. The dish eventually inspired other Singapore eateries in the Serangoon Road area to offer their own versions of fish head curry (see **Section 5: Edible Timelines**).

What these historical accounts miss out is the fact that restaurants and casual diners, by definition, generally commanded more resources than other types of food vendors. Restaurants could offer a wider variety of dishes than Singapore's now-celebrated food hawkers could have done as individual vendors in the 1950s (and even today). Restaurants were generally better positioned than itinerant hawkers to innovate and offer new dishes that challenged preconceptions of good food. The likelihood that some customers would reject dishes unfamiliar or novel to them could be hedged against by continuing to sell more 'traditional' fare.

The dining scene that introduced fish head curry to Singapore residents in the 1950s included a growing cluster of restaurants building on culinary traditions derived from various Indian subregions. Such eateries had sprung up as early as the 1920s within and around Singapore's Indian-dominated Serangoon Road area, serving migrants looking for a taste of home or food compatible with customary diets. Yet, from their inception, such restaurants were quasi-public entities by nature, attracting middle-class customers from other cultures in search of culinary novelty. The new clientele in turn helped drive culinary shifts. This phenomenon is still observed in migrant-run restaurants around the world today (Rawson and Shore, 2019).

It was certainly true for Gomez's eatery, whose Sophia Road address made it easier to enlist customers frequenting the middle- and lower-middle-class areas of Wilkie Road, Middle Road and perhaps even those from the more upmarket Orchard Road. At the outset, Gomez's clientele appeared to consist mainly of Keralan Indian, Chinese, British and Jewish individuals, mostly from professional backgrounds (Tay, 2011). Although fish head curry was first added to the Gomez cookshop menu around 1950, other preparations were more popular at the time. One former Chinese regular claims to have been attracted by the sheer range and quality of 'Indian' offerings. Some dishes were apparently Keralan 'curries' laden with thick cuts of meat or fish, while others were derived from other regions of India. One of Gomez's most outstanding preparations was a Malay-anised version of *korma*, known locally as *korma kuah* (literally 'korma sauce') (Tay, 2011).

By the mid-1950s, Gomez's fish head curry offering was seen as popular enough to inspire rival versions. Hoong Ah Kong, a former kitchen hand, set up an eatery at neighbouring Selegie Road specialising in 'Indian' dishes in 1951. Angling for the same kind of ethnically mixed clientele frequenting Gomez's Curry Shop at the time, Hoong began selling his own version of fish head curry in 1955–56, toning down the spices in his recipe. Hoong initially added heads of Spanish mackerel (*ikan tenggiri*) and large threadfin (*kurau*) to his curry bowls,

before substituting them 10 years later with cheaper heads of imported *ikan merah* (red snapper). Fish head curry in Singapore today is normally associated with heads from red snappers, red sea breams (*kurisi merah*) and sea bass (*ikan kerapu*), all of which are caught or farmed overseas. It is thus worth emphasising that Hoong's earliest versions of fish head curry used heads from fish that were seen as tastier and more succulent than *ikan merah*, and that these fish – *kurau* and *tenggiri* – were still sourced in significant amounts from Singapore's inshore waters at the time (Government of Singapore, 1967, p. 38).

What did local supply chains for commercial fish head curry actually look like in the 1950s? Restaurants made their living in the Serangoon Road area not just because of their customer base, but also because of their proximity to retail markets. Commercial survival depended on being near Tekka Pasar/Kandang Kerbau Market, then situated between Hastings Road and Sungei Road. Here, raw spices, fruits, vegetables, rice, meat and fish needed to prepare meals for both restaurant staff and customers could be purchased every day cost-effectively. Proximity was fundamental because most grocery shopping was done either on foot or rickshaw/trishaw, and refrigeration facilities for perishables like fish were either non-existent or rudimentary, making daily trips to markets essential for restaurant procurement, even in the 1950s.

Although the majority of Tekka Pasar's customers were ethnic Chinese women, the market also hosted a high proportion of customers of both Indian and Malay ethnicities, in keeping with the surrounding area's local character (Tham, 1954, p. 15). According to one Singapore resident who frequented the Serangoon Road area during the period:

Tekka Pasar... was the market of choice of South Indians, who were predominant in the area, and many stall-holders who were Chinese were necessarily familiar with the names in Tamil of the vegetables they sold. (N. Narayanan, in correspondence with authors, 6 Nov 2019)

The retail trade in perishables was vigorous and fairly price sensitive. In 1952, Tekka Pasar/Kandang Kerbau Market alone hosted some 35 fish retail stalls (Colony of Singapore, 1953, p. 57). There were also street retailers near Tekka Market maintaining less permanent niches in a crowded environment, with as many as 31 operating before the mid-1950s (Tham, 1954, p. 4). They took advantage of spillovers from Tekka Pasar's more sedentary establishment:

Tekka Pasar was what came to be known as 'wet-market', under the roof/s of which was available fresh produce, veg/non-veg. A 'secondary market' of sorts sprang up in the surrounding area, I remember one in particular on Hastings Road, on which road traffic was minimal. Edible – at one's choice, of course – stuff that failed to sell within the market proper was hawked on the pavement outside at an appreciable discount. As I have mentioned earlier, cost went a whole way further

than many other factors. (N. Narayanan, in correspondence with authors, 6 Nov 2019)

Although there were more than 1,000 registered fish retailers across Singapore in 1953, (Colony of Singapore, 1954, p. 228), such retailers – both sedentary and impermanent – were only one part of a longer chain driven by speed and proximity to buyers and sellers. Fish in the 1950s typically arrived at places like Tekka Pasar from several different central auction markets in Singapore. Among the largest and oldest of these were Clyde Terrace Market (built in 1874 near the junction of Rochor Road and Beach Road) and Ellenborough Market (built in 1845 and extended in 1899). Both were run by the City Council and lacked permanent refrigeration facilities but were relatively near the Serangoon Road area (Colony of Singapore, 1954, p. 228). Upper Serangoon Auction Market also played a significant role in channelling fish caught in Johor's waters. Less relevant at the time for Tekka were smaller, privately owned fish auction centres located at Marine Parade and Siglap. Once again, proximity was advantageous due to perishability and cost:

Most forms of transport are used for the carriage of fish from the auction markets. Retailers may travel by lorry, car, tricycle, or bicycle, or may proceed to the retailing point on foot carrying their fish in baskets. In some of the outlying markets the retailers have combined to use a common transport system. (Colony of Singapore, 1952, p. 54)

At wholesale markets themselves, interactions between wholesalers and buyers (who included retail fishmongers and itinerant hawkers) often took on a theatrical character, underpinned by the commercial pressures of the trade:

The method of auctioning is similar in all the markets. On most occasions the bidding is open, the retailers shouting their bids with the fish being sold to the highest offerer. Bidding by whispering or by ballot is common especially in the smaller markets, but in some cases this may be combined with open bidding before the result of the whispered auction is declared. A great deal of criticism has been directed at these 'secret' auctions, but in actual fact they result from the circumstances of the trade, the fish being auctioned to credit-worthy retailers rather than to retailers who are known to be unreliable or who are not known to the auctioneer. Even so, bad debts remain a major problem to all wholesale agents. (Colony of Singapore, 1953, p. 55)

Petty fish dealers, otherwise known in official parlance as 'fish collectors', were another important group of players in the chain at the time. They were situated upstream from wholesalers, but sometimes bypassed the main trade, selling directly to retailers:

Collectors, who generally live in the fishing villages [of Singapore], purchase the catches landed locally and subsequently dispose of the fish in a variety of ways. Where the volume of business is great the fish is iced and despatched to the central

auction markets. On the other hand, if the turnover is small the fish is generally sold direct to the local retailers or itinerant hawkers who service the area in the vicinity of the landing point. (Colony of Singapore, 1953, p. 50)

Finally, there were those responsible for bringing in the bounty of the sea. Within Singapore,

[the] fishing industry can be roughly grouped into four parts – the individual fishermen who operate small boats from the villages on the coast of the Colony; the operators of the fishing stakes or *kelongs*; the Singapore-owned fishing companies or wholesale fish dealers (who are the owners and occasionally the operators of the powered vessels based on the city area); and the large vessels which were transferred from Hongkong to the Colony during the year. (Colony of Singapore, 1953, p. 2)

Crudely speaking, the first two groups of fish producers were responsible for local, near-water catches like *kurau* and *tenggiri*. The third and fourth types of producers, better capitalised and in possession of vessels equipped with modern deep freezers to hold catches for much longer periods of time, led the expansion towards offshore fisheries, helping to bring down the market prices of previously expensive fish like *ikan merah* in the process.

Coming full circle, this dualism between the more traditional and more modern sectors of Singapore's fishing industry was also mirrored in physical differences between fish that arrived at the retail market through different means. The classic way to assess how fresh (and tasty) a fish was likely to be before purchasing it from the fishmonger was through a series of visual and haptic rituals:

First, [she] looks at the eyes of the fish and makes sure that they are clear and not diffused with blood or sunken. Then [she] looks at the gills to make sure that they are bright red and finally [she] presses his finger on the flesh to make sure that it is firm. These tests are efficient and any fish that passes these tests must be considered fresh. (Tham, 1954, p. 17)

The fish that could pass such inspections in the 1950s and earlier could only be found in local catches – largely from *kelongs* – that underwent minimal preservation methods or at the most, chilled storage using loose, crushed ice (Colony of Singapore, 1952, p. 88; 1954, p. 219). These time-tested methods of evaluation were unsuitable for growing numbers of fish sourced from distant waters. These catches could only withstand the journey to Singapore through longer-term refrigeration methods, such as brine freezing and quick-freezing to extremely low temperatures. When subjected to these more aggressive techniques, offshore catches, including *ikan merah*, underwent a startling transformation:

[The] eyes of the fish are invariably sunken and are often diffused with blood on account of the rupture of blood vessels in the eye region. Sometimes even the gills lose their red colour and the flesh becomes stone hard. The consumer, with no

experience of such fish, invariably rejects such fish as stale, although these quick-frozen fish are, in fact, more fresh than the iced fish which they buy. (Tham, 1954, p. 17)

Without the ability to evaluate freshness on the spot themselves, many Singapore households in the 1950s and 1960s had considerable trouble adapting to frozen fish, despite the fact that it was generally cheaper than fish marketed using more traditional methods. In 1952, for example, Singapore's Department of Fisheries, concerned about growing fresh fish shortages in Singapore, led an attempt to sell boatloads of red snappers caught offshore and frozen on trawlers in local retail markets. Yet, even at a quarter of the going price of white pomfret (*bawal puteh*), *ikan merah* was generally shunned by Singapore Chinese housewives, forcing fish dealers to re-export much of the catch, rapidly deteriorating, to markets in Johor.

However, cost-conscious restaurants and other commercial eateries who purchased fish in bulk (15–50 times as much as the average household per transaction; see Tham, 1954, p. 15) had fewer qualms about using such fish in their recipes, especially once chefs could confirm that consumers still embraced the final product on the table. A landmark review of the Gomez Curry Shop in 1973 found restaurant staff relying on red snappers and groupers to satisfy fish head curry enthusiasts (the eatery had since also relocated to nearby Selegie House, and was under new management) (Hutton, 1973). By this time, other eateries touting *ikan merah*-based fish head curry had already opened in Singapore, including two assam-flavoured versions staffed by outstanding Malay cooks: Encik Abu Bakar at Red Lion Restaurant (Redhill Close) and an unnamed cook whose “Malay stall [stood] in the hawker center below the flyover which bridges Thomson Road and Whitley Road” (Oon, 1974).

Although such commercial establishments helped adapt novel forms of seafood to popular tastes, broader shifts in society and economy, such as rising household incomes and the growing availability of food, were even more pivotal in transforming Singapore's food scene at a structural level. The next subsection unpacks the effects of growing abundance on Singapore's culinary cultures, looking at how eating *the same things* together is a surprisingly relatively recent historically driven process, and not one which can be taken for granted as a natural phenomenon.

b. Food history offers an accessible avenue for recovering a people's history of Singapore

As seen in the previous section, the development of Singapore's food culture and some of its iconic dishes were underpinned by a large cast of players that spanned different kinds of cooks, consumers and even food producers. To understand this historical phenomenon better, we can look at it in three connected ways:

- i. How the range, composition and expectations of cuisine were radically reshaped by the growing availability of food.
- ii. How this broad-based culinary expansion fed into the significance of food's centrality at major social events.
- iii. How knowledge underpinning the preparation of such dishes and others was shared and transferred from one individual to another.

i. From global scarcity to relative plenty: The rise of middling cuisines

For millennia, food consumption around the world was sharply segregated by rank and status wherever cities, states and empires existed. Differences between diets of the elite and diets of the humble were based not just on portion size or the prestige of the cut of meat involved, but on stark differences in ingredients, and proportions of staple and relish (the flavoursome sauce needed to help make the drier, bland starch go down more easily).

[High cuisines] were heavy in meats, sweets, fats and intoxicants, which together provided noble diners with perhaps 60 to 70 percent of their calories... Highly processed ingredients – the whitest hand-hulled grains or flour, oil or butter, sweeteners, and alcohol – were used partly because they were so costly. Exotic ingredients, paraded at ceremonies, mapped the huge extent of the king's territory for onlookers, reminding them that he commanded space, work, and transport. (Laudan, 2013, p. 37)

High cuisines were thus cuisines of palaces and noble houses. They were drenched in elaborate social codes, and left comparatively extensive written records:

Until a couple of hundred years ago, palace kitchen complexes were huge, staffed by hundreds or even thousands of bureaucrats, cooks of different ranks and specialties, bakers, and scullery workers. It is not unreasonable to think of these of these kitchens as the first big manufacturing enterprises, carrying out food processing that today is done in factories as well as preparing meals... Elaborate codes of etiquette specified who might dine with whom, who might watch, the clothes they should wear, what they should talk about or whether they should be

silent, the order in which dishes should be eaten, and how food should be conveyed to the mouth... Finally, high cuisines were recorded in a written language, which included hymns and prayers...recipes books...manuals on kingship...and pharmacopeias and dietetics. (Laudan, 2013, pp. 37–38)

Then there were cuisines of the humble, which fell into two subcategories. First, there were those of the peasantry, who made up the most of any population. Poverty meant that cheap bulky starches formed the overwhelming basis of meals, and they were eaten in down-to-earth fashion:

They ate cuisines that were in every way the inverse of high cuisines. The cooks were women...they stored grains and preserved foods for the lean season...fuel, water, and salt were costly and limited what could be done in the kitchen... The average country dweller in classical antiquity obtained 70 to 75 percent or more of his or her calories from roots or grains... To liven up these starches, or “make the rice go down,” as the Chinese put it, the poor added onions, a few boiled greens, a scrap of cheap meat, dried fish, or small birds or animals caught with traps... Meals were eaten without ceremony using the fingers or a spoon to scoop from a common bowl. The cuisine was memorialized, not in a written language, but in proverbs and songs. (Laudan, 2013, p. 39)

Peasant cuisines were also characterised by insecurity due to adverse weather, poor soils, pests and diseases, and extractive political regimes. Yet, despite the constant threat of starvation, skilful cookery during periods of relative stability could still bring pleasure to the poor:

[H]umble cuisines could be very tasty. The staple in particular was judged by the highest of standards. After all, if your diet consists largely of...rice or some other staple, you learn to be very discerning. The accompanying relish was a masterly combination of readily available, often vegetable ingredients. (Laudan, 2013, pp. 39–40)

The second type of humble cuisine was that of poor urban dwellers, who comprised the majority of town populations. Compared to rural cuisines, meals of the urban poor were generally more generous and varied, as urban elites feared food riots and could usually provide townfolk with sufficient food provisions, built in turn on heavy extractions from the peasantry. The main food-related dangers facing the urban poor were of a different sort:

[C]ity dwellers were more prone to food poisoning and waterborne parasites than their country cousins... Many townfolk were young single men, living either in cramped quarters without cooking facilities or in the households of their masters or employers. Fires were a constant hazard. Because fuel and water were expensive, street food and takeout food flourished, just as they do in the huge cities of the modern world. (Laudan, 2013, p. 41)

While middling cuisines that bridged the high and humble would not appear in any significant form until the rise of modern nation-states, industrialisation and rapid urbanisation, some of the moral values underpinning its eventual rise could be found as early as among the elites of Republican Rome:

Republicans believed that the state's success or failure depended on the civic virtue of all citizens – courage, simplicity, indignity, duty, honest, civility, reason, and temperance, including in eating – not just on the personal virtue of a monarch... They advocated a plain, restrained cuisine and opposed gluttony, the result of an unbridled or unnatural appetite, stimulated by the sauces and sweets of high cuisine. (Laudan, 2013, pp. 74–75)

Similar currents would appear elsewhere over time. Christian theologians promoted similarly civic-minded food-centric philosophies from the second to fourth centuries CE onwards. For a time, Confucian theory under the Han Empire promoted upper-class food consumption habits that were “decent and sufficient, not luxurious” (Laudan, 2013, pp. 79, 87, 92–94).

With the rise of modern nation-states, globalisation, industrialisation and rapid urbanisation, middling cuisines became a sustained reality across an expanding portion of the world, including Singapore, from the nineteenth century onwards:

Middling cuisines...were the major innovation of the modern period...rich in fats, sugar, and exotic foodstuffs, featuring sauces and sweets, middling cuisine became available to an increasing proportion of the population. Changes in political and nutritional theory underwrote this closing of the gap... [As nation-states arose,] it became increasingly difficult to deny all citizens the right to eat the same kind of food. (Laudan, 2013, pp. 208–209)

One key to this transformative shift was the global rise of the middle and working classes and their values:

The new salaried middle class...was largely composed of people whose parents or grandparents owned small farms or worked as farmhands... Men established themselves as small shopkeepers or took jobs as clerks or bureaucrats; women became housewives. The urban salaried middle class...occupied a social position intermediate between the aristocrats and the humble... Their salaries left no room for luxuries, and they depended on groceries that they purchased daily... [They thus placed] emphasis on thrift, respectability, and the safety of the food they purchased. (Laudan, 2013, p. 267)

By the end of the nineteenth century...the urban working classes were also eating middling cuisines... The traditional benevolent concern with preventing hunger and starvation among the poor was being replaced with a broader

concern about the quantity and quality of the cuisine of the poor... The poor...also wanted more wheat bread or rice, fats, sugar, and meats... However, given how little time [they] had to cook and how limited their kitchens were, if they had a kitchen at all, the frugal cooking and family dining of the middle class were rarely an option. The urban poor turned instead to ready-made and takeout or street foods. (Laudan, 2013, pp. 267–268)

It is also important to emphasise that the relative egalitarianism in food consumption was underpinned by not just a broader share of economic wealth, but ultimately political power as well:

[Middling cuisines] differed [from high cuisines] in not being used to express hierarchical political and religious power. Thus the changes that gave citizens more say in the political process in modern states were paralleled by the shifts that gave them access to cuisines formerly reserved for a powerful minority. (Laudan, 2013, pp. 248–249)

In short:

Now all could enjoy foodstuffs that had been the privilege of the aristocracy just a few generations earlier. (Laudan, 2013, p. 276)

Middling cuisines thus formed the global backdrop against which most of Singapore's most iconic edibles developed.¹ We can trace this narrowing between the high and humble in dishes as commonplace today as ice kachang.

Shaved-ice desserts and cooled sweetened drinks can be found in historical records as far as back as ancient empires existed across the Eurasian continent. However, until the nineteenth century, their ability to refresh and tantalise remained the purview of rulers and aristocrats across the world. Labourers had to gather snow and ice from nearby mountains, before storing them in relatively insulated places to prevent rapid melting. For instance, the courtly food of imperial Japanese classes of the late tenth century CE (*kaiseki ryori*) included what seemed to be highly pleasing “shaved ice flavoured with liana syrup on a silver bowl”, an early version of the family of shaved-ice desserts in Japan commonly known today as *kakigōri* (Fernandez-Armesto, 2001, pp. 109–110).

Within tropical Southeast Asia, much closer to Singapore, we also have records of a wedding feast at the royal palace in the mid-seventeenth century Aceh. Here, besides a long train of

¹ Betel chewing was an exception to this tendency, as the habit was practised widely up and down the social hierarchy in Southeast Asia, albeit in more refined formats higher up. (Lim and Pakiam, 2020)

celebratory dishes like biryani, “various jugs of crushed *syarbat* with *yazdi* rosewater” were served (Hoogervorst, 2019, p. 528). It is unclear what was being crushed to prepare the *syarbat* served in Aceh, though fruits or spices, rather than ice, seem the more likely candidates. *Syarbat* (or sherbet, as it is more commonly spelt today) has strong roots in Persian-Islamic cuisines of the eighth and ninth centuries CE:

“To enjoy sweets is a sign of faith”, the Qu’ran says... Soft drinks (sherbet or *sharab*) were sweetened with honey or costly sugar, tinted rose, green, or orange by pureed fruit or fruit juices or pure white by ground almonds, delicately spiced and perfumed with rose or orange blossom water, and cooled with snow or ice rushed from distant mountains to icehouses. (Laudan, 2013, p. 138)

Sweetness, vibrant colours, pleasant fragrances, and invigorating coolness were thus all part of a sherbet’s sensory experience.

Early versions of *syarbat* also gradually made its way into southern Europe, where it was eventually reworked into frozen desserts (*sorbetto* in Italian) made from sugar, strawberry flavouring, ice/snow and eventually even milk by the 1690s. With the growing global availability of ice and other ingredients, mechanised food processing, and dedicated confectionery outlets in Europe and North America, frozen desserts and ice-cream came within reach of the middle classes by the mid-nineteenth century. (Weiss, 2011, pp. 14–16)

In Singapore, some early records of commercial ice desserts can be found in 1883, in the form of newspaper advertisements by Joseph Baker, an ‘Ice Confectioner’ who sold ice desserts from retail outlets at North Bridge Road and No. 24 Stamford Road to the relatively well-heeled:

Ices and Water Ices can be had every day from 4 p. m. to 10 p. m. at the rate of 15 cents per glass. Three different kinds of Ice Cream made daily and one of Ice Fruits, and various kinds of cold drinks of the very best quality supplied at the shortest notice. Singapore, 2nd March 1883. (ST, 16 Mar 1883)

As manufactured ice grew cheaper in Singapore, street vendors began using ice blocks in increasingly sophisticated ways for various refreshments before and after the First World War:

The lemonade stall, with aerated [water] cooled by trickling over a block of ice, or by shavings made by drawing the ice down an inverted carpenter’s plane. (SFPMA, 26 Sep 1908)

[H]ave you ever noticed an iced-drink seller attending to the wants of his customers? Talk about ‘hijau’ [green] with crushed ice, every drink is cooled down with shavings of *ayer batu* [ice] sliced down with the carpenter’s plane. The old-fashioned way of pouring it from glass to glass over a chunk of ice, in the manner they mix American drinks, has gone out now, and every up-to-date soft drink seller

has to have his ice shaver. To say anything about the syrups used, or the soaked seeds that make a semi-glutinous mass soothing to the parched palate, or the chopped up seaweed jelly that looks exactly like soft glue, would not be to tell about a Queer Trade, but about the everyday luxuries of the poor. (SFPMA, 7 Jan 1909)

Stalls of liquid refreshment take one of two forms: the more elegant is a hard cart on wheels, with a zinc table top on which stand many bottles containing red, green, black, yellow syrups, a block of ice, an ice scraper and a pail of water for perfunctory “washing up.”... The other and more portable “bar” has all the bottles stuck into the table top, and the water carried along with them. (SFPMA, 8 Dec 1921)

By the turn of the century, the audience frequenting such stalls included rickshaw pullers:

One word more, for the rikisha coolie, whose thirsty soul looks longingly at the ice drink seller. Will they deposit their hard-earned cents there or not? (SFPMA, 16 May 1914)

The rickshaw coolie, breathless and perspiring after his labour of pulling a heavy fare through hot dusty street, stops to fresh himself with gulps of cool liquid, hastily but efficiently prepared from shredded ice and the required flavouring of rose water, lime or liquorice. (SFPMA, 8 Dec 1921)

They also included local schoolchildren, who in pre-1930s Singapore were still mostly the product of relatively well-off families. Among them, ice balls were reportedly already a popular choice:

The children of China are apparently very different from the Chinese children in Singapore... The ice cream habit is strong enough in Singapore among Chinese, and the favourite drink of the school, when it comes out, is iced water, with an occasional lump of ice cream shaving moulded into a ball, and a spoonful of syrup poured over it – a cheap crème de menthe iced, with the flavour of the palm. (SFPMA, 30 Apr 1924)

A version of ice kachang familiar to contemporary sensibilities had become a mainstay of Singapore's streets by the late 1940s, if not earlier.

Another ice preparation in great demand by a purely Asian populace, is shaved ice, heaped into a little mountain and served on a plate. The small ice heap covers a helping of red beans, a Chinese grape-like fruit, syrup and tinned milk. The whole concoction is called “Ice Kachang” and sells at 20 cents a plate. (SFP, 5 Oct 1948)

Tay Kheng Soon, former chairman of the Committee on Heritage for the Singapore Advisory Council on Culture and the Arts, has claimed that ice kachang had its origins in a red bean

dessert brought in by the Japanese during the Occupation (ST, 5 Jan 1989), but we were unable to locate any evidence to support this assertion. Although ice kacang has indeed had global roots, the idea of it being part of a Japanese Occupation-era legacy seems very unlikely. Thio Chan Bee, whose memoir Tay reportedly cited as evidence for the claim, actually asserts that Singapore street vendors were already supplying “the refreshing *ayer batu kacang*, a nutritious dish of boiled red beans and syrup, topped with shredded ice” before the 1930s (Thio, 1977, p. 12). Although there are no direct references to any desserts named ‘ice kacang’ in Singapore’s earliest culinary survey of nearly 800 different dishes sold on Singapore streets and in eateries, we found a similar preparation:

No. 573: Kachang mera [literally, ‘red beans’]. Ingredients: Kachang mera (imported), sugar (local). Preparation method: Kachang is first washed and then boiled in water for about one hour and then sweetened with sugar and sold with ice. / Prepared by Malayalees (Mohamaden) / Served Cold by spoon/ Sold to 30 to 40 persons per day, 9 am to 6pm, 2 cents a glass, 230g. (Canton et al, 1940, p. 130)

This interwar-era account of ‘iced red beans’ is corroborated by N. Narayanan’s personal recollections:

In my early schooldays (the mid-1930s), the ‘ice seller’ was a familiar sight on Singapore roads... he was usually a South Indian Muslim, perhaps Malayalee *Kaka*, with the push-cart that was common to hawkers of those days. It had a galvanized zinc top, on which were placed his ‘stock-in-trade’ – transparent glass containers of various cold sweetened drinks. As well as bottled fizzy drinks on the ‘shelves’.

Solid blocks of ice with saw-dust for insulation were kept in a small box – usually on the ground below. A wooden block in the middle of which was a sharp knife-blade jutting out slightly was placed handily on the zinc, and when required, the ice-block would be slid over it to produce ice-shavings, which would be expertly moulded into balls, and sugary-syrup of choice poured over it. I think the ‘kachang’ was added to be in the centre, with more ice-shavings to cover it – this on request. This anyway is my earliest recollection of ‘kachang ice-ball’/‘ice-kachang’. The finished product cost a cent, or at most two. (N. Narayanan, in correspondence with authors, 6 Nov 2019)

Other accounts of iced-water vendors, such as P. Maidin, who began by plying his trade with Convent of the Holy Infant Jesus pupils at the Cathedral of the Good Shepherd grounds around 1918–1919, also tell a similar story (ST, 10 Apr 1952; 13 Aug 1980).

If, as Tay Kheng Soon claims, there was indeed a Japanese link to the introduction of red beans in shaved ice in Singapore, it would have been a pre-World War Two-era introduction. Perhaps, as in the case of *halo-halo*’s potted history in the Philippines (Ocampo, 2012), it was

introduced, at least in part, by pre-war Japanese immigrants seeking to make a living from selling *kakigōri*, using locally manufactured ice and imported red adzuki beans.

Ice kachang was undoubtedly one of Singapore's earliest middling cuisines. As an interwar-era street food prepared by Asian migrants and consumed by Asian middle classes, it essentially showcased the gradual development of broader-based prosperity even before Singapore's independence. To contemporary observers, the idea of ice kachang being a rich person's dessert might seem strange. But it was no joking matter for those who lived in an age when ice desserts were confined to the wealthiest social strata just several generations beforehand in temperate regions, let alone the tropics.

ii. Food and social events

Seen in this light, food's central role in social events takes on additional significance. While eating together daily helped strengthen household bonds, to eat together at ritual occasions signified broader forms of commensality, in which certain cuisines would be vested with additional meaning in relation to the occasion at hand. With the rise of middling cuisines, these meanings could be embodied within a larger population than ever before, and on a more frequent basis.

Of all our case studies, we found biryani to be probably the most celebratory of all dishes. Many of the reasons seem obvious: it was (and continues to be) strongly associated with the prestigious cuisine of the Mughals, as well as earlier Persian links to pilau rice (Collingham, 2007, pp. 27–39). Partly because of these ties, biryani also acquired the patina of the colonial cuisine of the British Raj, as well as that of British Malaya (Holttum and Hinch, 1935, p. 78). It is a complex, time-consuming, and laborious dish to prepare (especially in the *dam pukht*, slow-cooked style), relying on long lists of ingredients. Its resource intensity therefore positioned it as a meal that benefited from preparation in large batches, ultimately favouring large gatherings of like-minded souls (see **Section 10: Appendix 4**). Last but not least, there has generally been a strong Islamic shading to the dish, rendered even more desirable by the dish's Middle Eastern-South Asian roots.

While festive biryani today is mainly associated with weddings and fundraisers, biryani previously appeared in a wider variety of local events in Singapore. Cathay-Keris Studio sometimes held biryani feasts to kick off film proceedings:

A day before the filming of *Bawang Putih Bawang Merah* began in Singapore, director Roomai Noor and his staff held a feast where biryani was served and accompanied by prayers with the crew. (Authors' translation; BH, 17 Oct 1958)

The filming of *Laila Mainum* will begin in a few days' time. A biryani feast was held last Saturday at one of the studios of Cathay Keris Film Productions, East Coast Road. It was attended by about 400 people made up of artistes from the studio and reporters. (Authors' translation; BH, 21 Apr 1962)

The end of the Muslim fasting month could be an occasion for biryani:

Perkumpulan Seni Singapura [Singapore Arts Group] will be holding a Hari Raya Aidilfitri gathering on 2 March from 7pm to 1am. There will be a variety of activities on that night such as dances, competitions, and a silat performance. Biryani, various kuih and fruits will be served. To attend a man will have to pay \$3, a woman \$2.50, and a man-woman pair \$5. (Authors' translation; BH, 27 Jan 1963)

Approximately 500 members of the People's Action Party [PAP] attended a reception/feast where biryani was served. The event was held in celebration of Hari Raya Puasa [Eid al-Fitr] last night. Those in attendance included PM Lee Kuan Yew, finance minister Goh Keng Swee, and Rahim Ishak [then deputy director of Malay affairs for the PAP]. (Authors' translation; BH, 18 Mar 1963)

Hari Raya has not only been celebrated by Muslims in Singapore and Malaysia. The Chinese here have also been partaking in the festivities. It is a great opportunity for non-Muslims and Muslims to strengthen friendship and goodwill. The Chinese get to taste and learn how to prepare authentic Malay dishes and kuih which are difficult to make. Now, many Chinese women can cook Malay dishes. The Chinese also get to learn more about Islam. In the villages, the Chinese deliver gifts to their Malay friends and neighbours. The Malays invite their Chinese friends to their homes during Hari Raya. They give kuih, biryani, ketupat, pulut [glutinous rice] and other dishes to their friends who are not Muslims. (Authors' translation; BH, 2 Dec 1969)

Biryani was also served at circumcision ceremonies:

18 orphans at the Darul Ihsan orphanage (Mattar Road) were circumcised one after another today. This is the first time that the orphanage has held a mass circumcision ceremony and also the first in Singapore. It was preceded by a prayer for the safety of the children and a feast where biryani was served. (Authors' translation; BH, 10 Aug 1966)

Haji Habron and his wife, Raja Kedah, held an event to celebrate their two sons getting circumcised. Hundreds of guests were invited...the invitation cards were sent out very early... The feast [*majlis kenduri*] was like a wedding There were tents, rented chairs and tables, servings of biryani rice with a meat dish as well as a variety of kuih, just like a wedding. (Authors' translation; BH, 21 Dec 1975)

The Prophet's birthday (*Mawlid*) was one of the most regular occasions at which biryani was served and enjoyed in very large groups:

The Istana Kampong Glam was en fete on Tuesday when the local Muslims gave a children's party to celebrate the occasion. The organisers thought that, children

being especially dear to the Holy Prophet, it was desirable that they should be made happy on his birthday. This is the first celebration of this kind in Singapore and the public expects that it will be repeated every year. From 10.30 am Muslim children from all the Malay schools and mosques in different districts of Singapore were brought to the Istana in lorries and cars. Well-trained boys from the Al-junied Islamic School were singing the Holy Prophet's eulogy during the day. About 5,000 children were guests of the occasion and were treated to a 'makan biryani' [*Biryani meal*], after which about 1,000 adult visitors were also similarly treated. After the 'makan' [*meal*] a short lecture in simple Malay on the Holy Prophet's life was delivered. At 3pm the children formed a big procession in lorries and cars and went round the important districts, returning to the Istana at 5pm, where they were served with cold drinks. (MT, 30 Jul 1931)

About 10,000 Malay schoolchildren and adults were entertained to a feast of 'nasi briani' (rice and mutton) in celebration of the birthday of the Prophet Mohamed at the Aljunied Islamic School, Victoria Street yesterday. Seated cross-legged on the mat-covered floor of the Aljunied Islamic Schoolhouse, boys and girls thoroughly enjoyed themselves over large trays of the 'nasi briani' served to groups of four or five... The adults had their feast from 11am to 1pm. In the afternoon, the Malay Boy Scouts gave a display. Lectures on the occasion were given in English, Malay, Arabic and Tamil, and Dr. H. S. Moonshi spoke in English on 'The Holy Prophet' at 5.30pm at the Aljunied Islamic School. (ST, 3 May 1939)

More than 10,000 Malay, Indian and Arab Muslims of all ages in Singapore were given free helpings of nasi briyani and curry at the 'Moulud Sheriff'...organised by the Singapore branch of the All-Malaya Muslim Missionary Society at the Aljunied Islamic school yesterday. The 'Moulud Sheriff' committee...collected more than \$7,000 for the celebrations. The Chairman of the 'Moulud Sheriff' committee for this year is Mr. Ahmed Ibrahim. The vice-chairman is Mr. H Hussein and the joint secretaries at Mr A. Wanjor and Mr M. A. Alsagoff. (ST, 25 Jan 1948)

At least 15,000 Muslims of different races will join the Mawlid process at 2.30pm on Wednesday. 49 groups/contingents will participate in the procession. They come from various political, social, religious and cultural bodies. 29 drum [*badrah*] groups/ensembles will also be there. Armed forces such as the navy, police, auxiliary forces, the Red Cross and many others will be there as well. The procession will start at Kandahar Street and proceed to North Bridge Road, Arab Street, Beach Road, Middle Road, Victoria Street, Kallang Road, Geylang Road and finally Jamiyah [the organisers] at Lorong 12. Talks about Prophet Muhammad, his journey and greatness will be held at Jamiyah. They will be in Malay, Urdu, Tamil, and Arabic. On Wednesday morning, a biryani feast will be held for all school children. (Authors' translation; BH, 22 Aug 1961)

These girls, who were busy enjoying biryani, were among the 5,000 Singaporean students who were served on the Prophet Muhammad's birthday last week. Students, as many as 5,000 of them, were from religious schools, 'orphanage schools', Malay schools, and several English schools. The feast began at 8.30am and ended at 12.30pm. As many as 12 sacks of rice were used for this feast. (Authors' translation; BH, 28 Aug 1961)

Indeed, as food became cheaper and more abundant in Singapore, making or selling biryani as a way to raise funds for social goods provoked increasingly frequent debates and discontent about the purposes of such consumption:

Singapore Muslims will hold a mass rally at Jalan Besar Stadium on Jan. 11 to celebrate their Prophet's birthday anniversary. Instead of the usual nasi bryani, the crowd will have light refreshments. The committee has decided to conserve the funds collected, for general Muslim welfare and religious work. (ST, 21 Dec 1948)

[Letter to *Berita Harian* from reader A. Nong Chik from Tiong Bahru, in support of Haji Ya-acob Mohammad's plea for the 400,000 Muslims in Singapore to make donations while celebrating the Mawlid: A. Nong Chik felt that Ya'acob's plea to celebrate the Mawlid in a beneficial way should be given more attention.] It is time for us to stop wasting money on holding feasts that are not beneficial. God did not ask us to do so, and the Prophet [Muhammad] would definitely not like that his birthday is being celebrated in a wasteful manner. Hence, let's celebrate the Mawlid as a day to renew our determination and not only to enjoy nasi minyak and biryani. (Authors' translation; BH, 27 Apr 1972)

[Columnist 'Chenderawaseh' comments sarcastically on how Mawlid was being celebrated in Singapore in the mid-1970s] There will be food served at every Mawlid. Cold water and the variety of regular kuih are insufficient. There must be biryani. And nasi minyak. Meat or chicken dish. [He complains about the excessive spending incurred to hold such events, from holding feasts to inviting and paying for the transport and accommodation of foreign Islamic scholars to give talks at these events:] Why is this so? Was it commanded by God? Did Prophet Muhammad ask that his followers do such a thing? (Authors' translation; BH, 30 Mar 1975)

Biryani was also popular with non-Muslims before the Second World War, and often associated with ritualised extravagance:

The YWCA Sports' Club girls were given a treat when they and their friends were invited to a very enjoyable picnic party given by Mr. and Mrs H. R. S. Zehnder at their holiday home at Ponggol on Sunday. The morning began well with the weather at its best. With the tide rising gradually, some of the party went down to the pagar for a swim, with others chose to go out exploring in a launch specially

provided for them and the rest were content to sunbathe. Lunch was an excellent 'Nasi Briani' affair. (SFPMA, 1 Apr 1941)

More than 1,000 people, wives, children and employees of the Archipelago brewery, Singapore, were treated to food and fun at the company's premises at Alexandra Road yesterday evening to celebrate the winning of the Empire Gold Medal for the best beer... Last night's entertainment consisted of two kinds of food, nasi biriyani and nasi goreng, beer and other assorted drinks and a film show of cartoons and comedies. (ST, 15 Oct 1950)

A dozen tables groaned under mountains of food at Wesley Church, Singapore, yesterday. The occasion was a fund-raising food fair, and 28 dishes from six countries were laid out... I was able to chomp through Javanese kuay pisang, British potato salad, Malay laksa, Chinese yong tau foo, Indian nasi briani and an American hot dog without the slightest strain. (ST, 7 Mar 1954)

A luncheon of banquet proportions [is] to be held in the Victoria Memorial Hall on Nov. 2 – the Duke [of Edinburgh] will be served with some of Malaya's most famous dishes. Among more than 20 dishes on the menu there will be satay, lamb kebab, chicken and lamb biriyani, shark's fin and bird's nest soups, chicken stuffed with bird's nest, Johore crab, and sweet-and-sour fish. The luncheon is being given by the Singapore, Chinese, Indian and Malay Chambers of Commerce. It will be buffet style so the Duke will be left entirely free to make his own choice of the unaccustomed fare. (ST, 11 Oct 1956)

iii. Culinary knowledge accumulation and transfers

Such occasions of communal feasting beg the question: who did all the cooking? Those in fulltime family businesses, such as Islamic Restaurant, maintained and transferred culinary practices to the next generation over a century (Ow, 2019, pp. 56–67). Such eateries served both in-house diners keen on celebrating a special occasion, as well as catered to external events (ST, 12 Nov 1950). But for most of the twentieth century and earlier, biryani, like other large collective dishes, was more often than not prepared privately within the extended family in communal, *gotong royong* arrangements, helping to socialise the costs of labour and renew ties between relatives. As nuclear families gradually became the norm in Singapore from the 1950s onwards and it became more difficult to muster the resources of an extended family to prepare feasts for special occasions, more and more families began turning to professional events and food businesses for help.

Besides preparing biryani and its [accompanying dishes], these businesses also rent out crockery/tableware, tables and chairs, tentage, pots, and anything else that is needed to hold a wedding. Such businesses are expanding especially at this time

when people who want to have a wedding prefer to have one ‘with a contract’ [ie, by means of an agreement] (Authors’ translation; BH, 27 Jan 1977).

In turn, this growing commercialisation of cooking creating opportunities for home cooks to run their own home businesses on a flexible basis. Such was the case of Kamisah binte Adan, one of our interviewees, who helped with extended family cooking arrangements, but required adequate cash as compensation as well:

From the late 1990s onwards, she occasionally cooked for relatives’ weddings at void decks: beef biryani, sweet and sour fish, *ayam masak merah*, *dalcha*, mutton, and prawns. Her first wedding opportunity was her youngest brother’s brother-in-law’s wedding, where she cooked for 1,000 people. It was cheaper if she cooked than the family to hire a cook; she received some money for cooking. She bought ingredients from a wholesale market in Pasir Panjang, costing over a thousand dollars... Another family requested for her to cook in 2000, with 1,500 invitations sent out and possibly 3,000 guests. She was worried about cooking for such a large audience. She cooked for a total of six weddings, not counting smaller engagement parties for about 300 people. She found the work profitable but tiring. She would start cooking at midnight although preparations began earlier. (Notes from interview with Kamisah binte Adan, 20 Feb 2019)

How did the practical know-how to cook complex dishes like biryani circulate over time? In Kamisah binte Adan’s case:

While she lived at Kampong Melayu, she learnt to cook biryani from her uncle, Abu Bakar bin Abdul Rahim, who lived nearby at Kaki Bukit at the time. She was the only person interested at the time. Initially she would observe him in the kitchen, before going on to help cut ingredients. Eventually he asked her to help with the cooking itself. Her uncle’s recipe for “special biryani” was “incomparable”. It contained cashew nuts, almonds, butter, Carnation milk, and raisins. The recipe was passed down through generations: Her uncle learnt it from his uncle, Haji Kassim, who learnt it from his father, Haji Deraman. (Notes from interview with Kamisah binte Adan, 20 Feb 2019)

Most home cooking in Singapore was more quotidian, less spectacular and largely hidden from public view, and yet it was also a storehouse of knowledge and cultural traditions. Everyday cooking demanded good time management, marketing proficiency, knowledge of appropriate ingredients, adept preparation methods, compatible flavour combinations, leading sometimes to what could best be described as the cook’s own flourish.

Most interviewees learnt some cooking when young by observing their elders and assisting them in the kitchen:

Devi's mother had 14 children, and they learnt how to cut fish, chicken and vegetables by observing her. But her mother did not explicitly teach Devi how to cook, except how to make *dosai* using coconut chutney. (Notes from interview with Vasanthara Devi, 29 Mar 2019)

At home, she learnt to cook dishes from her Peranakan Chinese mother. Her mother did not need to use cookbooks and her teaching philosophy was: "Just look and see, and you ask and I'll tell." (Notes from interview with Irene Lim, 3 Oct 2019)

She learnt cooking from her mother by observation – it "happened very naturally" as she played in the kitchen when she was young. (Notes from interview with Jean Ho Yin Peng, 6 Oct 2019)

Interviewees also exchanged recipes and cooking tips through eclectic social networks of friends, colleagues, market associates, neighbours and even home economics classes:

She learnt how to steam fish from the fishmonger at the market. (Notes from interview with Tan Ah Kok, 3 Jul 2019)

She exchanged recipes with neighbours in Lorong 41 and learnt to make soon kueh and other kueh. (Notes from interview with Eileen Kiong, 5 Jul 2019)

She found she liked cooking when young, especially from Home Economics cooking classes. The classes were important to her as they sparked her interest in cooking and gave her some basic knowledge on frying, poaching, steaming and on basic Chinese and Malay dishes. (Notes from interview with Jean Ho Yin Peng, 6 Oct 2019)

She feels her cooking has improved since she first came to Singapore in the late 1950s, because she has mixed with other people through activities like group meditation and yoga, and learnt their cooking methods over time. (Notes from interview with Meenakshy Narayanan, 7 Oct 2019)

Others, self-taught to a large extent, learnt through trial and error in earlier years:

She learnt cooking by taste and colour. Her father could cook and had recipes but he passed away in the mid-1930s she was seven so he did not teach her. (Notes from interview with Eileen Kiong, 5 Jul 2019)

From the 1960s onwards, cookbooks, television shows and eventually social media began to creep noticeably into knowledge acquisition:

She obtained many of her recipes from a book by Mrs Leong Yee Soo, which has a recipe for Peranakan mee siam. Some of her recipes were obtained from Ellice Handy's book. (Notes from interview with Loh Choe Jin, 24 Jul 2019)

She explored cooking when she became a fulltime housewife, learning from TV programmes such as *Yan Can Cook* and *Fang Tai [Mrs Fong]*. She took notes of the recipes and they were very helpful. She was thus able to cook dishes such as carrot cake, Taiwanese dishes and burgundy pork chop. (Notes from interview with Aida Wong, 23 Oct 2019)

She also learns new recipes from YouTube. Experiments with these recipes to figure out which ones work and which don't. She will mix and match recipes until she develops her own recipe. Her children also send her links as Meena is happy to try cooking non-Indian dishes. (Notes from interview with Meenakshy Narayanan, 7 Oct 2019)

When interviewees were asked if they were passing on existing knowledge to other family members including their children, responses suggested the transfers – many still ongoing – were similarly informal, eclectic and sometimes even written down in advance:

She is willing to teach her children knowledge of spices if they are receptive to learning. Her children now accompany her to Tekka Market to purchase ingredients. Her daughter now knows how to buy some of the ingredients. At the same time her daughter claims, only half-jokingly, she can learn cooking through YouTube. (Notes from interview with Syamala Senan, 25 Sep 2019)

She has not tried too hard to teach her children her cooking techniques. Some of them can cook already. One of her daughters, Lakshmi, makes good chapatis. (Notes from interview with Meenakshy Narayanan, 7 Oct 2019)

She has taught her daughter Hasnita a few dishes. She has written down her recipes in notebooks for her children to learn. (Notes from interview with Zaiton binte Abdul Rahman, 26 Oct 2019)

Far from being static heirloom, culinary knowledge within home settings is constantly being generated and reworked over time. Transfers of know-how between one generation and the next, if they do occur, are seldom complete, and are essentially negotiated outcomes where the next generation decides which dishes are more valued than others, and whether they need altering for given circumstances. In the third and final main section, we look at the broad historical context against which individuals have made decisions – both consciously and less so – about what to cook and eat.

c. Singapore's iconic edibles were most influenced by forces during the twentieth century

Why have some dishes survived and grown in popularity, even becoming iconic today? Why have others, which were once popular, even ubiquitous, faded over time? There are no definitive answers to these complex historical questions. Much depends on the exact details of the food item in question, and the specific context in which it was embedded. Nonetheless, based on our analysis of the seven case studies at hand, we can highlight five broad avenues that impacted heavily on Singapore's food culture.

- i. The advent of artificial refrigeration
- ii. The rise of culinary nationalism
- iii. Unprecedented urbanisation and hygiene challenges
- iv. Food standardisation and branding
- v. Changing tastes between generations

While bearing in mind that most of our case studies have origins that can be plausibly traced back many centuries ago, we need to balance that view with the perspective that some periods were more crucial than others for shaping the food culture we have with us today.

Our core contention here is that of the past seven hundred years of Singapore's documented history, the twentieth century was the most significant century for Singapore's food culture. Many, if not most, of Singapore's old cuisines declined or vanished during this interval (see Canton et al, 1940). Yet others not only survived but prospered.

i. The advent of artificial refrigeration

Cooking is deeply influenced by technologies that are often taken for granted once they are well established. These include any form of equipment that helps with soaking, chopping, grinding, rolling, marinating, heating, cooling, and preserving food and its constituent ingredients. Often what comes to mind in the first instance is the stove and the application of fire in one form or another. While the shift from wood and charcoal-based fuels to stoves using electricity and natural gas was indeed an important factor in driving culinary change in Singapore during the twentieth century, we believe that ice, rather than fire, was probably even more critical in shifting the playing field. Artificial refrigeration, conceived as the endeavour to lower food temperatures significantly below ambient levels, had an outsized impact on how food in a tropical environment like Singapore's was produced, transported, stored, and even conceptualised. In less than a century, refrigeration made it possible for an unprecedented range of food items to be consumed by an increasingly broad proportion of Singapore's population.

The history of artificial refrigeration in Singapore is commonly associated with the incorporation of the Singapore Cold Storage Company Limited in 1903 or, to a lesser extent,

Hoo Ah Kay's brief and unsuccessful attempt to contract regular supplies of harvested ice from North America during the 1850s, due to supposedly insufficient local demand (Goh, 2013; Baker, 2005, p. 45). The narrative suggests that the half-century between the 1850s and early 1900 was insignificant for Singapore's modern history of artificial refrigeration and, by implication, Singapore's food history.

What these narratives neglect to mention is that Singapore was home to a permanent ice manufacturing presence as early as 1861. The earliest enterprise was the Singapore Ice Works, which actually competed with imported harvest ice for local markets from the outset. After some early teething technological and commercial challenges, the firm encountered more competition from other ice manufacturing outfits, including Pioneer Steam Works and the Straits Ice Company, as well as a range of home-based, small-scale icemaking machines targeting wealthy households before the end of the nineteenth century. Ice was mostly used for medicinal purposes, chilling drinks and desserts of the wealthy, and, most significantly, to preserve fish caught from distant waters. As early as 1875, ice was even considered a necessity of life in Singapore by better-off individuals. Portable and relatively cheap, locally made ice was the main form of refrigeration in markets, retail spaces, and homes before the 1960s in Singapore, and continues to be used widely by local food retailers and fishmongers even today.

There were nonetheless significant differences between refrigeration in the nineteenth century and the twentieth century, most prominently the increasing availability and lower cost of ice over time. In 1888, the Straits Ice Company was producing five tons of ice a day for the Singapore market. This had expanded to 12 tons a day by 1896. The company's output had skyrocketed to 85 tons daily by 1926, but even this paled in comparison to Singapore's estimated total production of 300–600 tons a day by the mid-1930s. Much of this ice was channelled into the expanding Singapore-based fishing industry, especially Singapore's Japanese-owned fleet. This fleet, specialising in the use of trawlers and other fossil-fuel powered vessels for offshore operations, was responsible for up to two-fifths of Singapore's fresh fish supplies between the 1910s and late 1930s, as well as supplying the Japanese market with frozen fish. After the local Japanese fishing industry dissipated during wartime and reconstruction, a 1948 survey of Singapore's ice industry found that roughly half of all ice was still being used for chilling freshly caught fish, with the remainder purchased by retailers for food preservation, drinks cooling and ice-cream manufacture (SFP, 5 Oct 1948).

These differences in refrigeration over time were reflected in the distinctions between who could and could not eat fresh fish. As late as the second half of the twentieth century, the overwhelming majority of Southeast Asia's population still subsisted on diets based largely on dried seafood, rice, spices and fruits, especially coconuts. As in the rest of the region, only those who fished and the wealthiest strata could afford to eat a wide variety of seafood, served as fresh as possible. An 1895 report asserted that Singapore's urban working classes ate two meals day, mostly boiled rice and a "small morsel of dried fish", whereas Europeans and wealthy Asians could regularly enjoy fresh meat or fish on their tables twice a day, including

Spanish mackerel (*tenggiri*), pomfret (*bawal*), mullet (*jempul*) or some other similarly tasty fish found in Singapore's local markets (SFPMA, 5 Mar 1895). The notion that more residents could enjoy a regimen that included fresh seafood, as well as pork, chicken, beef or mutton, only started becoming a reality following the Second World War, in line with Singapore's steadily growing proportion of salaried middle-class Asian residents. Dried, salted fish correspondingly became less of a low-cost protein staple for the masses, and more of a high-grade condiment (Pakiam, 2020).

The growth of the fishing industry and its demand for ice had knock-on effects in other culinary realms. As we saw earlier, iced confections were already being retailed in Singapore by the 1880s, primarily for the well-heeled, who would have undoubtedly included Asians (**Section 4bi**). By the 1890s, the Asian market had already made a noticeable impact on the demand for ice:

Since the reduction of the retail price to something like three-fifths of a cent a lb., the native and Chinaman have developed a great liking for ice, and it is hoped, for the Companies' sake, that the taste will be further developed and the demand consequently increased. The manager of one of the ice companies told us that the consumption of ice by natives to that of Europeans has now risen to the ratio of six to one! (SFPMA, 26 Nov 1890)

By 1926, the spread of ice's popularity beyond the fishing industry to the retail scene, including iced dessert vendors, had been long taken for granted:

I need scarcely add that there is a growing demand for ice by all classes of the community, which recently it has been difficult to satisfy. (MT, 30 Apr 1926)

ii. **The rise of culinary nationalism**

As seen earlier, the global spread of middling cuisines was not just a cultural and economic phenomenon, but a political experience as well. As cuisines began to be perceived as familiar to all residents in a given territory, and even eaten by all of them on occasion, the notion that certain dishes were better expressions of national territorial identity than class affiliation began to take hold (Laudan, 2013, p. 234).

The lens of cuisine even enables us to get a flavour of the tentative, messy nature of early nationalism in Singapore. Perhaps because it was already seen as a staple of the richer and poorer Asian classes in Singapore by the beginning of the twentieth century, laksa was a particularly potent dish for expressing new forms of imagined communities in Singapore.

Thus when Lim Boon Keng gave a lecture at Singapore's Chinese Christian Association on how local Straits Asians could maintain and even improve their social status in the 1920s, he

pointed out the importance for the young to understand the local cultural milieu they had been raised in:

The next problem you have to think of is the influence of our entire environment, that is, the social life in Singapore. The social life in Singapore is a complete mixture. In Scotland, you say, Scotch broth; in Singapore, the nearest thing is Laksa – everything mixed up. And if you are a student of psychology or sociology or humanity it will take you many years really to study the effects of Malaya, of all the customs, bad habits and good habits. (SFPMA, 17 Feb 1926)

Like biryani, laksa was also a staple of pre-Independence fundraising events in Singapore, including efforts to provide relief for the unemployed in the 1930s. As Japan went to war with China, homemade laksa even became a vessel through which local Chinese upper and middle classes could express solidarity against Japanese imperialism:

Shocked by harrowing stories of human suffering caused by ruthless bombarding of their countrymen...by tales of hungry, crying children robbed of their parents and left to perish, the Chinese women of Singapore have hit on a novel way of raising funds for the upkeep of these destitute war orphans. Their enterprise costs of a café at the Great World... where delicious Chinese and local dishes may be obtained every Saturday night. This food is all home made and is contributed...by members of the China Relief Fund Committee (Woman's Section) who also take it in turns to serve behind the counter... Local dishes, such as Laksa and [Popiah] are sometimes served while even delicacies like sharksfin, bird's nest and cooked rice wrapped up in lotus leaves are obtainable here if sufficient orders are received. (STS, 5 Feb 1939)

The irony of serving a 'local' dish like laksa to support a 'Chinese' cause gave way to further social transformations. After the Japanese Occupation, growing numbers of young Malaysians went abroad for their university education, in the process inadvertently learning more about what it meant to be 'Malayan', not least through food:

One of the more popular notions in Malay about Malayan students in London is that the students are having a 'grand time' abroad. Nothing, however is further from the truth. Malayan students are having...an interesting, busy and even lean time. Today's students queue for the bus, share 'digs', swot hard for the examinations, buy a cheap seat at the cinema and occasionally cook their own meals... A great deal of ingenuity is practised by students in 'digs' in cooking their own Malayan food. There is the Chinese student who claims that he has found the best available ingredients for cooking *kai cheok* (chicken broth) – Bachelor's chicken noodle, dehydrated chicken and rice. Laksa is produced by another out of vermicelli, roti babi out of bread, eggs, mackerel and tamarind and minced beef, onions and garlic. (ST, 16 Dec 1951)

Long before Singapore's independence, there were already food fights about which version of Malayan laksa was the best, provoked by the remarks of Western outsiders:

America's food expert, Mr. C. A. Rietz, thinks Singapore's food is 'wonderful' but up-country folks and even many Singaporeans maintain that the home of good Malayan food is Penang... Mr Jimmy Tan, an airline clerk: 'Although a Singaporean, I have to give the credit to Penang for food. 'She has Siamese laksa of the sweet and sour type, Chee Yok Chok (pork broth), and delicious Hockien Mee... Singapore perhaps can only boast of its Chicken Rice. (SFP, 27 Jun 1953)

iii. Unprecedented urbanisation and hygiene challenges

The development of Singaporean nationalism is also tied to basic questions of development and broad-based economic growth – in essence, a large portion of what modernisation in Singapore was about during the twentieth century. Much of Singapore's old infrastructure did not mesh well with the urgencies of mass industrialisation and a steadily growing population, leading to rapid urban development. Much has been written on this in general, but perhaps less on the mixed impacts urban renewal had on local food culture:

I remember Hong Chew Kee [stall] from old People's Park... After the famous fire and resettlement, business deteriorated... Dish by dish the traditional desserts went. Up to the beginning of this year the sponge cakes were still available, but now no longer because of poor sales. (NN, 21 Sep 1979)

Redevelopment was also driven by long-standing public and privately aired concerns about cleanliness, hygiene and outbreaks of contagious diseases, such as tuberculosis, in a crowded city. By the 1930s, there was a growing stigma in Singapore against everyday behaviour and habits that could spread diseases through bodily fluids and even touch, especially in public. Spitting became increasingly politicised and of concern for public health. Such developments helped drive the decline of betel chewing, though its loss of popularity occurred over the space of a generation, rather than within a few years. Thus in 1949, betel chewing and public spitting were still widely seen as habits that would be impossible to eradicate:

Why don't you know? The Government has passed a new law forbidding spitting. What are we supposed to do with betel spit? Swallow it. What if a fly got in your mouth? Likewise, swallow it. (SFPMA, 4 Jul 1949)

Seventy years later, betel chewing for Singaporeans existed primarily as a local memory, and its few local practitioners had fully absorbed the messages about the habit's unsightliness:

The first important thing is that, it's very messy and untidy. Dirty, lah! Dirty and scary, so dirty... I am very careful. I cannot swallow the red thing, but I choose where I spit. I always spit in the dustbin. I cannot throw, the thing is too dirty! [Laughs]. (Authors' interview with G. T. Lye, 13 Jun 2020)

Anxieties about public order and dirt also affected many other culinary offerings, some for the better, others for the worse. In Singapore, repeated outbreaks of typhoid and cholera, spurred by the sale of uncooked dishes such as iced desserts and ice balls, led to a groundswell of interest in finding ways to 'clean up' food businesses since at least the 1920s. Concerns fuelled attention to the steps being taken elsewhere in urban Southeast Asia to manage the sale of uncooked street food:

The health authorities of Manila have prohibited the hand scraping of the ice served in refreshment establishments and have demanded the adoption of safe hand machines for the purpose. Everybody in Singapore must have seen the man with a bucket not too clean, a few bottles of brightly coloured syrups, an inverted plane and a block of ice, with which he makes a handful of ice scrapings, moulds it with his hands into a ball, pours a spoonful of sweet water over it, and hands it to the expectant youngster, doubtless to the greater satisfaction of the mouth of the consumer than his stomach. Dirty, incredibly dirty, no doubt, to the minds of Europeans. (SFPMA, 17 May 1924)

With increasing numbers of vendors using hand-cranked machines rather than bare hands to shave their ice blocks during the first half of the twentieth century, ice balls began to decline in popularity, and had become largely the stuff of memories by the late 1970s (NN, 8 Jun 1978). Ice kacang, on the other hand, had become nominated as a Singapore 'national treasure' by the mid-1980s (ST, 9 Aug 1985).

iv. Food standardisation and branding

The growth of industrially manufactured ingredients and food items, the rise of middling cuisines, hygiene pressures, and the rise of families and family life in Singapore, all helped spur the expansion of corporate-influenced local food culture.

As in much of the rest of the world, processed foods for the masses were originally a middle-class novelty in Singapore. Milo, for instance, was promoted in Singapore since the 1930s as a hygienic, nourishing, sweet, delicious, well-packaged and relatively affordable food item to both European and Asian professionals, since they constituted one of the few sections of society in Singapore who had both the purchasing power and kitchen space to make their own cups of drinking chocolate. Sugar's prestige across Asia was also not just economic, but religious as well (Mazumdar, 1998; Laudan, 2013).

By the 1950s and 1960s, however, brewing Milo with cow's milk was becoming a habit for growing numbers of households trying to raise healthy children. Children who disliked milk's taste often found it easier to consume when flavoured with the sweetened chocolatey taste of Milo, Ovaltine and other instant beverage powders. With more women entering the formal workforce in the 1960s, many families faced the paradox of growing incomes but shrinking time at home. Easy to store and prepare, Milo insinuated itself into breakfast and night-time routines for time-scarce families. With each successive generation of Milo drinkers, the

beverage increasingly brought people together through space and time. As an aggressively marketed brand that adapted well to local cultures, Milo took on multiple meanings associated with sports, freedom, health, modernity and even fun, ultimately paving the way for the marketing of the Milo Dinosaur in the 1990s. By this point, the habit of eating sweetened foods every day had become more or less normalised in Singapore's popular food culture, even as people became more aware of the health risks associated with excessive sugar consumption (Pakiam, Nathan, and Toffa Abdul Wahed, 2019).

v. Changing tastes

Much of tropical Southeast Asia, as any local aficionado of *keuh* can confirm, has been no stranger to sugar and sweetened foods since the distant past. Many local fruits were sweet, sugarcane was indigenous to the region, and sugar could also be obtained from the sap of many varieties of local palms, including the nipah palm, sugar palm, palmyra palm and coconut palm. South Asia has had a similarly lengthy history of sugar cultivation, extraction and consumption, partly linked with Buddhist cuisine (Laudan, 2013; Bosma, 2013).

East Asia, however, is a different story. For most of China's long history, for instance, the only source of local sugar came from malt syrup, extracted from sprouted and dried grains with water (Laudan, 2013, pp. 19, 34). Sugarcane was known mostly as an exotic plant from the far south, whose products were destined for the relatively few urban rich. Even at the end of the nineteenth century, most Chinese used very modest amounts of sugar in their cuisines (Mazumdar, 1998).

Many of Singapore's food offerings with mainland Chinese origins before the 1950s did not contain much sugar or sweetness, even at the level of desserts. However, as incomes rose, and industrially manufactured foods become more widespread and affordable, older cuisines began to fall by the wayside:

One [offering] that is fast losing popularity is mee teh or flour drink. It is made from flour which is first fried and then steamed. Sugar, lard, fried spring onions and sesame are added to give the drink a spicy taste. Hot water is then poured to the mixture to obtain either a paste or a liquid. Stall owner Madam Ong Bee Hoa comes from China. She claims that the recipe originated from her late husband's forefathers who owned a confectionery shop in China. Her decrepit stall in China Street now sells assorted Chinese food. A few years ago, it was the congregating place of old-timers for a bowl of steaming mee teh. Why the switch in line? 'Mee teh is not popular with the younger generation – only with the China-born folks, and how many of them are still around?' (NN, 8 Jun 1978)

The only desserts from the old days still surviving are the egg custard and a bitter sweet 'liang teh'... Sadly Hong Chew Kee now has to resort to selling ice kachang, bubor cha cha and bottled soft drinks to survive among the competitive 'modern' sweet stalls. (NN, 21 Sep 1978)

Even Singapore's local betel chewing culture has been gradually impacted by sweeter versions from South Asia, though the preference for sweetness was by no means straightforward:

The Indian preparation of betel nut, I prefer [to the plain Peranakan version], because it's sweet and has a lot of spices... I enjoy it. (Authors' interview with G. T. Lye, 13 Jun 2020)

Radhika would prefer the sweeter North Indian version because the South Indian version "burns the mouth", because of the *chunam* [slaked lime]. The burning sensation is linked to her worries about tongue cancer. (Notes from interview with Radhika Narayanan, 7 Oct 2019)

The question of changing tastes is thus more complex than simply having acquired and assuaged a sweet tooth. Health beliefs also played significant roles in local culinary choices and, in the case of home cooks, the dishes they prepared for their families, provided they could afford to do so:

She has reduced salt in the food but will not reduce sugar. She likes sugar in food. She changed from lard and peanut oil to corn oil due to her husband's health issue. She did not cook or eat canned food. (Notes from interview with Eileen Kiong, 5 Jul 2019)

In the past, she could not afford to eat healthy or organic food like those available now. (Notes from interview with K. Narayani, 1 Aug 2019)

Whatever she chooses to cook, they will eat. But will change recipes to include more rice and protein for her son, who asks because he works out at the gym. (Notes from interview with Syamala Senan, 25 Sep 2019)

Meena doesn't like the taste of soya bean milk. But her daughter Radhika does. (Notes from interviews with Meenakshy Narayanan and Radhika Narayanan, 7 Oct 2019)

Intergenerational differences in taste preferences are generally tricky to document, and even harder to rationalise. But perhaps it is worth concluding this section with an acknowledgement of how exposure to new forms of cuisine during one's formative years in Singapore has the power to change and broaden palates over time:

Syamala doesn't cook fish head curry. She laughs, calling it a dish only found in Singapore. Yet after buying a big fish from the wet market, she cooks the head separately, cuts it into small pieces, adds curry, and serves it with tapioca. She says it is eaten like this across Kerala. Consumed within the kitchen only, not served to visitors. Syamala doesn't like to eat the head of the fish. She finds it very difficult. Her children are better at eating it. Her daughter is the specialist. (Notes from interview with Syamala Senan, 25 Sep 2019)

5. Edible Timelines

These timelines are intended to provide a brief, illustrative culinary biography of each of our case studies. Differences of interpretation and emphasis place inherent limits on their comprehensiveness. For further data and analysis, including home cooking, please refer to the appendices in **Section 10**.

a. Biryani

Period	Development
1500s	Biryani allegedly the result of an amalgamation of Hindustani and Persian cuisine through third Mughal Emperor Akbar's "policy of inclusiveness".
1800s	Biryani arrives in Singapore either from Indian immigrants or from the Middle East via India.
1921	Abdul Rahiman, the head chef of the prominent Alsagoff family, opens Islamic Restaurant—one of the oldest and most renowned biryani restaurants still in operation in Singapore.
late 1920s	Biryani, with either chicken or mutton, is offered at non-Muslim eateries, such as the YMCA Cafeteria. Chicken, interestingly, is the more expensive option.
1931	The Singapore Free Press and Mercantile Advertiser wrote that "Arab briani and pilau" was embraced by Malay people, just as they did Islam, preparing it as a dish for special occasions.
1931	5000 Muslim children from all the Malay schools and mosques around Singapore are treated to a "makan biryani" at a children's party in Istana Kampong Glam, the first of several such celebrations for children held in the 1930s.
1935	The YWCA Cookery Book lists biryani as "a favourite dish at European tables in Malaya".
1949	Biryani served at a luncheon hosted by representatives of Singapore's Muslim community for the crew of a Pakistani warship visiting Singapore.
1954	A restaurant claiming to be "Singapore city's best Muslim restaurant" boasts that it is visited daily by "Europeans, Chinese, Malay, Indians and Arabs", who partake in dishes such as biryani.
1960s	Biryani is commonly served at celebrations, religious festivals, fundraisers, and political events, especially within the Muslim community, although non-Muslims are frequently invited to join.
1961	Malayan and Pakistani soldiers stationed in Congo celebrate Hari Raya Aidil Fitri with a feast of biryani.
1961	5000 students from religious schools, "orphanage schools", Malay schools, and English schools were served biryani on the Prophet's Birthday. As many as twelve sacks of rice were used for the feast.
1970s	As Singapore becomes more affluent, biryani is increasing available in air-conditioned eateries and hotel restaurants.
mid-1970s	As more people move into HDB estates, it becomes increasingly common for Malay people to hire wedding caterers to prepare favourites like biryani, instead of asking their relatives to help.
1980s	Biryani becomes increasingly accessible and it is offered by some eateries as an inexpensive, everyday, and working-class food; this is in sharp contrast to its origins from the kitchens of Mughal palaces and its place as a celebratory food in decades past.
1980s	Biryani typically presented in local newspapers under the broad umbrella of Indian, Malay, and Muslim cuisines.
1981	Islamic Restaurant opens a branch in Changi Airport, serving biryani in a modern, air-conditioned setting. The chicken biryani (\$2.80) costs more than the mutton biryani (\$2.20).
1985	Nasi biryani is nominated by the Straits Times as one of Singapore's top twenty foods.
1986	A Straits Times article notes that without biryani, "a local Muslim wedding would not be regarded as grand", indicating that the dish remains an integral part of feasting and celebrations in the Malay community.
1988	A Straits Times article notes that some <i>kenduri</i> (social feasting) events in the Malay community involve a pooling of resources to prepare dishes such as biryani or <i>nasi minyak</i> .

b. Betel Quid

Period	Development
600s	Ancient historians record the use of betel in Ceylon and Persia.
1300s	Archaeologists date containers with traces of lime in Singapore, possibly used for preparing <i>sirih</i> , to the 1300s.
1597	English herbalist John Gerard describes the areca nut as the “drunken nut”, due to its allegedly intoxicating effects when consumed with slaked lime.
1800s	Betel chewing is enjoyed by a broad swathe of society in Singapore, typically aristocrats, merchants, and labourers in the Indian, Malay, and Peranakan communities.
1840s	As a testament to how widespread betel chewing is, selling <i>sirih</i> and betel quid becomes a trade that requires a government license—like the rights to sell alcohol, food, and opium—becoming a source of state revenue.
1900s	Betel is hypothesized to be a cause of oral cancer.
1907	In his book about Hindu aphorism, an American writer described betel nut as “the chewing gum of the Orient”—speaking to the widespread popularity of betel chewing across parts of Asia.
1930s	Betel chewing becomes increasingly associated with oral cancer.
1948	Inche Yahaya bin Hashim, Malacca’s Public Relations Officer, reports that the old habit of “munching betel leaves” was fast giving way to cigarette smoking in the Malay community of Malacca, which he attributed to the past twenty-five years of school education.
1949	An article in the Singapore Free Press describes Singapore’s streets as being often polluted by betel quid spit.
1950s	Among the Indian community in Singapore, betel chewing was mostly enjoyed by women. The typical image of a Tamil grandmother was of her “sitting with her legs stretched out at ease and pounding away her chew of betel in her little mortar”.
1950s	Betel chewing reportedly begins to fall out of favour among young adults in Singapore.
1960s	Local newspapers increasingly report on the link between oral cancer and betel chewing.
1973	Violet Oon, then a renowned food journalist, notes that betel chewing is already seen as part of the past by the Peranakan Chinese community.
1973	The Singapore Ministry of Environment introduces a new set of public health regulations, one of which states that hawkers are prohibited from chewing betel while preparing or selling food.
mid-1970s	The weekend crowd at Geylang Serai Market is described as comprising mostly elderly people who chewed betel together.
1980s	Elderly Peranakan Chinese women continue to be popularly portrayed as <i>sirih</i> connoisseurs, preparing and enjoying betel while playing card games.
1980s	The practice of betel chewing becomes increasingly rare, a remarkable decline of an age-old and prevalent habit.
1980s	The Singapore government develops Little India into a tourist attraction and the <i>paanwalla</i> (betel quid vendor)—regarded as stalwart of the district—is retained for his “local flavour”.
1980s	The Malay custom of <i>bantar sirih</i> (presenting betel)—in which a male suitor presents a gift of betel quid to a prospective wife—is reportedly dying out amongst the Malay and Peranakan communities.
Late 1980s	The <i>paanwalla</i> are considered one of numerous vanishing trades in Singapore.
2010s	The betel quid trade in Singapore is now largely supported by migrants and tourists from countries like Bangladesh, India, and Myanmar.

c. Fish Head Curry

Period	Development
6,500 – 1,300 BCE	Archaeologists date the cooking and eating of whole fish heads in Indus Valley and Baluchistan subsistence economies to this period.
1800s	Consuming “curry” was part of British colonial culture, gradually spreading from India to other parts of the empire in Asia.
1865	Curry was reportedly consumed three times a day by British colonials, it was a way of stretching and making palatable limited supplies of meat that were often of poor quality.
late 1800s	Singapore’s working classes ate an average of two meals a day, consisting mostly of boiled rice and “a small morsel of dried fish”. In contrast, Europeans and upper-crust Asians regularly enjoyed substantial portions of fresh meat or fish.
1910s	Singapore becomes the centre of Southeast Asia’s expanding fish trade. Japanese-owned fishing fleets begin to dominate the trade, capturing, freezing, and transporting thousands of tonnes of fresh fish from around the region to Singapore.
1915	<i>Tekka Pasar</i> or Kandang Kerbau Market is built. For the next 66 years, it supplies the raw spices, fruits, vegetables, rice, meat, and fish needed to recreate familiar Indian cuisines to households, eateries, and restaurants nearby.
1919	The <i>Straits Times</i> publishes a report about “fish head smuggling”, in which cooks for European households would use their marketing budgets to purchase fish heads for their own consumption—indicating that there was demand for fish heads, at least amongst Asians and the lower classes.
1921	C. N. Maxwell, in documenting locally caught fish, remarks on the delights of <i>tenggiri</i> : “The cook should not be allowed to remove the head which is the best part of this fish, and many others.”
1920s	A cluster of restaurants serving cuisines derived from various Indian sub-regions developing within and around the Indian-dominated Serangoon Road area.
1920s	Fish curry was a staple at the YMCA Cafeteria, indicating that seafood served in curry was becoming more accessible to the middle class consumers.
late 1920s	Singapore’s inshore <i>ikan merah</i> stocks heavily depleted because of high demand, turning the fish into a commodity widely sourced from the wider Malay world.
1930s	Fish head dishes prepared and served by Chinese hawkers and eateries, suggesting that there was a market for this type of protein.
Mid-1930s	Street hawkers in Singapore documented selling ‘otak-otak rumpa’: <i>ikan tenggiri</i> fish heads turned into otak-otak, wrapped in coconut leaves.
post-WWII	As Singapore recovered from WWII and middle-class Asians grew in number, more people could gradually afford a daily diet of fresh meat and seafood.
1949	Marian Jacob Gomez established an eatery, later known as Gomez Curry, along Sophia Road. His clientele appeared to consist of Keralan Indians, Chinese, British, and Jews, including civil servants and professionals.
c. 1950	M. J. Gomez adds fish head curry to his eatery’s menu.
1951	Hoong Ah Kong, a former kitchen hand, establishes Chin Wah Heng Eatery in Selegie Road, near M.J. Gomez’s eatery, angling for the same kind of ethnically mixed clientele.
1952	Singapore’s Department of Fisheries, concerned about growing fresh fish shortages in Singapore, unsuccessfully attempted to sell off boatloads of frozen <i>ikan merah</i> caught offshore. This was due to Chinese apathy towards offshore frozen fish, which they found unfamiliar and potentially unhygienic.
1955	Hoong Ah Kong begins selling fish head curry at his eatery, suggesting that the dish was sales-worthy enough to inspire rival versions.
mid-1950s	Singapore’s fishermen reportedly exploiting the island’s inshore waters to their maximum intensity.
1964	M.J. Gomez leaves Singapore for Kollam.
1965	Hoong Ah Kong’s eatery substitutes <i>ikan tenggiri</i> and <i>ikan kurau</i> with <i>ikan merah</i> heads in fish head curry.
early 1970s	Fish head curry comes of age, as several other eateries touting the dish now exist in Singapore, including hawker stalls.

1981	Violet Oon, then a renowned food journalist, writes of fish head curry as an example of food indigenous to Singapore.
1981	Stallholders from <i>Tekka Pasar</i> move to the newly opened Buffalo Road Market and Cook Food Centre, which was soon renamed Zhujiao Centre. In 2000, it was again renamed Tekka Centre.
1981	Architect Tan Shee Tiong writes of fish head curry as a “proud national recipe” with origins in Race Course Road, an area that should be considered a heritage site.
1983	Minu Tharoor, the wife of an Indian UN diplomat, wrote, “Calcutta, where I come from, is nothing like Singapore. Serangoon Road is nothing like any Indian Street I’ve seen. I know of no Indian restaurant in India that serves fish-head curry.”

d. Ice Kachang

Period	Development
900s	During summers, the Japanese aristocracy would consume dishes of shaved ice flavoured with sweet syrup; this was likely considered an exclusive treat reserved for those of higher status.
1600s	In Aceh, a wedding feast at the royal palace featured jugs of crushed <i>syarbat</i> [sherbet] with rosewater.
1845	Earliest known proposition to construct ice houses and regularly import American ice to Singapore for European consumption.
1851	Ice and “fruit ices” available for purchase at London Hotel in Singapore for dinner parties.
1860s	Ice is reportedly used in Singapore as a therapeutic substance to combat certain ailments.
1861	The Singapore Ice Works begin operations to manufacture and offer ice locally, in direct competition with the Tudor Ice Company, an importer of natural ice.
1862	The Singapore Ice Works sell their ice-manufacturing machine and close operations, after likely failing to compete against the Tudor Ice Company.
1865	The Singapore Ice Works resumes operations after the import of a new ice-manufacturing machine.
1875	An Australian traveller notes that ice was considered a “necessary of life” in Singapore, in contrast to Queensland, where it was still considered a luxury item.
1883	In Singapore, an ice confectioner at 24 Stamford Road sold ices and water ices from the late afternoon to late evening at the rate of 15 cents per glass.
1883	The term “ <i>ayer batu</i> ” [ice stone] appears in a Chinese-Malay dictionary.
1890	Singapore has two ice companies in operation: British-owned River Valley Works and Dutch-owned New Ice Works. The market is largely sustained by non-Europeans, who consume ice at a ratio of six to one relative to Europeans.
1893	Singapore is regarded by middle-class British people as a place where “ice is plentiful and cheap”.
1904	A breakdown in local ice works results in an “ice famine” in Singapore, much to the chagrin of the European community.
mid-1900s	The use of ice shavers by street vendors are an increasingly common sight, who use them to shave sheets of ice into cups for cooling drinks, up until the 1920s.
1920s	Local merchants, such as the Java Syrup Company (95 Roswell Road), offer a variety of syrups for sale, such as rose, lemon, orange, strawberry, pineapple, apricot, <i>pisang ambon</i> , champagne cider, grenadine, etc.
1924	First mention of ice balls in local newspapers as a favourite treat of local Chinese children.
1924	The Singapore Medical Health Officer recommended that ice vendors should be outlawed because their preparation methods were regarded as unhygienic and a danger to public health.
1926	The Singapore Cold Storage reports that a growing demand for ice by “all classes of the community”, which has been difficult to satisfy, indicating that ice had become an affordable luxury.
1930s	Japanese and Malayalee street vendors in Singapore sold a dish of boiled red beans, syrup, and shredded ice—one possible antecedent of the ice kachang.
1930s	Itinerant hawkers who sold ices reportedly used a distinctive tinkle to advertise their presence in an area.
1933	Ice water and ice cream sellers suspected of spreading typhoid amongst schoolchildren around Bencoolen Street, Bras Basah Road, Short Street, and Selegie Road.
1934	Three major ice manufacturers in Singapore—New Singapore Ice Works, Atlas Ice, and Singapore Cold Storage—produce a total of around 300 to 600 tons of ice daily for half-a-million Singapore residents. The bulk of ice demand is from the fishing industry.
1937	Ice cream and iced drinks sellers again suspected by health authorities of being amongst the most dangerous and disease-causing of hawkers.
1938	In Telok Ayer, a typhoid outbreak results in 71 deaths, including 42 children, caused by hawkers who sold unclean iced desserts.
1948	Ice production in Singapore returns to pre-WWII levels, at 300 tons daily. Half of the supply is used to ice fresh fish. The main manufacturers are the Singapore Cold Storage Company, New Singapore Ice Works, Atlas Ice Company, Framroz and Company, and Tuck Lee.

1948	"Ice kachang" is first described in detail in local newspapers as heap of shaved ice served on a plate and topped with "a helping of red beans, a Chinese grape-like fruit, syrup and tinned milk".
1948	Fridges installed in homes, coffee shops, restaurants, and hotels reportedly offering serious competition to ice factories.
1965	The Ministry of Health introduces a new Hawkers Code for licensing and controlling hawkers, especially handlers of uncooked food and iced drinks.
1970s	Risk of diseases, such as cholera and typhoid, still associated with local ice hawkers, as outbreaks continue to occur.
1971	First newspaper mention of ice kachang in a permanent stall: the Arcade's Little Café.
early 1970s	Ice kachang becomes increasingly acknowledged as a "local favourite" in Singapore by eateries and newspapers.
1979	The Singapore Tourist Promotion Board presents ice kachang as a local dish in its campaigns in Australia, Hong Kong, and New Zealand.
1980s	Numerous complaints in the newspapers about "old favourites" like ice kachang and chendol disappearing from the streets and being relocated to hawker centres.
1980	Ice ball selling featured as a vanishing trade at the National Day Parade.
1984	The Straits Times describe the Singapore-style ice kachang as a "mountain of shaved ice packed rather tightly" and served simply with red beans and <i>atap chee</i> , as opposed to versions in Indonesia, Malaysia, and the Philippines.
1985	Ice kachang is nominated by the Straits Times as one of Singapore's top twenty foods.
1986	Only one independent "ice ball stall" reportedly remains in operation in Singapore.

e. Laksa

Period	Development
400s BCE	Indian traders allegedly introduce a variety of herbs and spices to Southeast Asia, such as galangal, garlic, ginger, lemongrass, pepper, shallots, tamarind, tumeric—some of which are ingredients for laksa.
700s	Shrimp paste—an integral ingredient in laksa—is used for cooking in the cities of Pattani and Nakhon Si Thammarat, a part of southern Thailand then ruled by the Srivijaya Empire.
1000s	Brian Colless argues that Singapore was producing bananas, sugarcane, rice, and coconuts at the time—the last being an important ingredient in laksa.
1500s	Portuguese traders introduce chilli to maritime Southeast Asia, a spicy fruit that eventually becomes an integral part of the region's cuisine.
1912	A dish called laksa—which includes vermicelli and black fungus—is first mentioned in local newspapers as a “familiar” street hawker dish beloved by Chinese coolies and Straits schoolboys alike.
1920s	The name “laksa” is also widely referred to a type of rice-flour noodles, typically manufactured by Chinese people. Western observers likened it to macaroni or Italian pasta.
1926	While delivering a lecture to the Chinese Christian Association, Lim Boon Keng uses laksa as a metaphor to describe how “mixed” the social life of Singapore was. He also describes laksa as a “famous Chinese dish”.
1930s	Laksa is a dish that is often served at fund-raising bazaars, suggesting that it is popularly enjoyed by the public.
1931	Seow Poh Leng, a prominent banker and advocate for street hawkers, eulogizes the suicide death of a laksa-seller, who faced poverty and police harassment.
1948	The Malaya Tribune describes laksa as a “Malay concoction”.
1950s	Homesick Malayan students studying in London regard laksa as “Malayan food”.
1950s	Newspaper journalists in Malaya begin to make comparisons between laksa in Penang and Singapore, sparking a decades-long rivalry.
1976	Laksa is presented and served as a Singapore dish at Singapore Restaurant in London.
1979	Along with seven other chefs, a laksa hawker is flown from Singapore to Hong Kong to prepare and serve laksa at an eight-day Singapore food festival.
1979	Violet Oon, then a renowned food journalist, notes that “fat rice noodles” are usually used in laksa, although <i>kway teow</i> is sometimes used.
1980s	As Singapore's hospitality sector develops, laksa is now offered in air-conditioned eateries in places like Goodwood Park Hotel and King's Hotel, a far cry from the days when it was sold by street hawkers.
1980s	Laksa-flavoured instant noodles begin to appear on the market.
1986	Alongside <i>rendang</i> , <i>mi rebus</i> , and <i>lauk lodeh</i> , the head chef for Malay food at the Hilton Hotel lists laksa as one of numerous iconic Malay dishes—reflecting the dish's long-standing associations with the Malay community and its cuisine.
2015	In New York, K.F. Seetoh, a food entrepreneur-photojournalist, featured laksa as an iconic local dish at a hawker pop-up store during Singapore Restaurant Week.
2017	A tourist shop in Changi Airport offers laksa-flavoured cookies, a sign that the dish has a recognizably distinct flavour profile.

f. Milo Dinosaur

Period	Development
1880s	Advertisements for drinking chocolate powders can be found in Singapore newspapers.
1934	Australian chemical engineer Thomas Mayne invents Milo, named after a legendary sixth-century BC Greek wrestler, for Nestlé.
mid-1930s	Milo advertised in British Malaya as an affordable and convenient “fortified tonic food” for middle-class individuals in need of calming or stimulating refreshment.
1940	Nestlé advertised a family recipe for “Milo Milk Shake”, which bears similarities to Milo Dinosaur.
1950s	Milo advertisements target Asian Malayan students, housewives, professionals, and those leading (or aspiring to) sporty, leisured lifestyles. Free samples are distributed at amusement parks, remote communities, and schools.
1950s	“Milo vans” first make their appearance in Malaya and Singapore. In the coming decades, these vans and the ice-cold Milo they served at school events become for many a treasured part of their childhood experience.
late 1950s	Nestlé runs a newspaper campaign promoting “Milo Delight”, urging families to sprinkle Milo powder over bread, preferably with Nestlé-owned Milkmaid condensed milk.
1965	Malaysia and Singapore become separate countries, later resulting in Nestlé advertising in both states along national lines, pushing consumers to imagine Milo as a national drink.
1970s	Alongside Horlicks and Ovaltine, Milo was widely offered as a breakfast beverage at coffee shops in Singapore as an alternative to coffee and tea.
1980s	Reports of people in Singapore enjoying cold Milo, sometimes topped with extra powder at home.
1984	Nestlé begins local production of Milo at a factory in Jurong.
1990s	Blockbuster films like <i>Jurassic Park</i> (1993), <i>The Lost World</i> (1997), <i>Godzilla</i> (1998), and <i>Jurassic Park III</i> (2001) featured giant reptiles that populated the public's imagination.
mid-1990s	In Singapore, A&A Muslim Restaurant (then at 431 Sembawang Road), Al-Ameen Eating House (4 Cheong Chin Nam Road), and Al-Azhar Eating Restaurant (11 Cheong Chin Nam Road) all claim to have invented Milo Dinosaur.
mid-1990s	In Malaysia, a similar drink called the Milo Shake was being offered at roadside stalls.
early 2000s	Singapore newspaper columns begin to discuss what exactly Milo Dinosaur was, suggesting that it was rising in popularity.
mid-2000s	Milo Dinosaur and Milo Godzilla are widely offered at eateries and hawker stalls around Singapore, cementing its place as a popular local food.
2009	In an interview, Nestlé Singapore's Managing Director stated that a sale team was partially involved in the development of Milo Dinosaur at an unnamed Singapore coffee shop.
2015	In New York, K.F. Seetoh, a food entrepreneur-photojournalist, featured Milo Dinosaur as a local drink at a hawker pop-up store during Singapore Restaurant Week.
2016	Joseph Schooling, Singapore's first Olympic gold medalist, drank Milo Dinosaur, his favourite drink, at his favourite hawker stall during his victory parade.

6. Recommendations

As the first major collaborative study of Singapore's food history since the fourteenth century, this project has sought to provide an understanding of the specific issues involved in historical research on food, the kinds of food-related questions that history can address, the broad range of registers and contexts that food history narratives can cover, and the tensions between change and continuity in Singapore's history, as seen through food-themed lenses.

From the standpoint of food history, two primary gaps in heritage were identified by the team:

- a. Current official efforts to promote food heritage in key physical sites lack sufficient historical contextualisation.
- b. NHB's current heritage trail offerings often do not show much understanding of how local food heritage is rooted in multiple, connected spaces beyond the reach of existing trails.

The study offers two key recommendations for future heritage programming in Singapore:

- a. Spaces rich in food heritage should be more closely integrated with digital history

To support food heritage efforts more effectively in both the physical and online worlds, NHB and other relevant government agencies should consider making digital integration a prerequisite of future design and installation of its promotional materials. Existing 'front end' heritage infrastructure should also be updated with **QR codes** that allow visitors with internet-ready equipment easy access to additional layers of context-specific information about Singapore's food history and heritage.

Existing 'back end' digital resources, including information hosted on Roots.sg, Infopedia and other online repositories, can be leveraged for these blended marketing/educational strategies. As more research on Singapore's food history is surfaced, there will be more opportunities to develop the digital heritage ecosystem and tailor aspects of it to physical food heritage spaces.



Figures 2 and 3. Heritage signage outside Newton Food Centre’s front entrance. Photos taken by Geoffrey Pakiam, February 2020.

Newton Food Centre’s existing heritage signage is a classic example of an underutilised opportunity to close the data and marketing gap between the relatively ample documentation of tangible spaces and relatively sparse coverage of intangible heritage. The left panel contains an informative briefing on the history of Newton Food Centre, accompanied by historical

photographs. The right panel attempts to promote some of the hawker centre's 'local drinks' without acknowledging that these items have their own distinctive histories and regional origins. Moreover, while attractive design and good copy can encourage interest in food culture and heritage, neither panel is equipped with prompts for individuals to delve further into Singapore's food history, or even the history of Newton Hawker Centre.

These gaps present opportunities to nudge audiences to explore and reflect more on Singapore's food and cultural heritage at their own convenience. QR codes on signage could easily link visitors to online resources via their personal digital devices, like smartphones. More extensive historical narratives can then be provided online, supported by an array of relevant multimedia resources. Audiences can be encouraged to explore these resources at their own time and pace. Visitors can also provide timely feedback through these online channels.

Physical spaces for food culture should not be seen as mere nodes for showcasing living heritage and offering a thin layer of background information onsite, but opportunities to bring museum-like experiences into more unconventional domains in a tasteful and discreet fashion. Strategic links to digital history resources can help fulfil these goals in a practical and cost-effective manner.

b. Heritage trails should incorporate more scalable, multi-sited approaches to food heritage

While existing official heritage trails help to foster a deeper appreciation of the ties between intangible heritage and local landscapes, much more can be done to showcase Singapore's food heritage in an accessible, story-driven manner. As seen earlier in **Section 4a**, iconic dishes such as fish head curry are products of an ensemble of connected individuals and spaces: they span eateries, retail and wholesale markets, and even local farms and fisheries.

Given the already considerable resources invested in district-centric trail designs, NHB and other agencies may also wish to consider extending Singapore's official heritage trail ecosystem in the direction of more thematically driven approaches. The Jubilee Walk is a recent example of this shift towards connecting existing landmarks in creative ways that straddle multiple time periods and communities. Meanwhile, 'food chain' or 'farm to fork' heritage trails can offer a similar genre-expanding thematic approach that can be potentially linked with food and water security concerns. Such trails could thus be tailored towards both local mass audiences, including schools, as well as more adventurous tourists seeking out experiences focused on gastronomic narratives.

These trails can be scaled in ways that meet a wide range of audiences, budgets and time constraints. At their simplest and most accessible, food chain heritage trails can involve a tour of selected eateries and their local histories, with special emphasis on an iconic dish. Extended

versions can use the same iconic dish as a springboard to explore other relevant heritage sites beyond eateries, including wet markets, wholesale markets, food and ice factories, inshore aquaculture operations, farms in Western Singapore, and even Singapore's central catchment area for its history of clean water supplies. Depending on coverage, these trails can take the form of half-day, full-day or even multi-day experiences, unpacking the dish and its associated ingredients to produce a series of narratives that reinforce the significance of already existing landmarks in Singapore in new ways.

The value of such food chain trails lies in their strong ability to provide a multisensory understanding of the labour, natural resources, and ingenuity that go into making local cuisine available to the public daily. There are likely to be ample opportunities throughout for audiences to witness living heritage and its links with the past, for example, at working *kelongs* around Singapore. With the rise of synthetically manufactured protein (both of the plant- and lab-based varieties) and other highly processed ingredients, interest in agricultural history, market heritage and food's historical ties to local landscapes is likely to expand in the near future, in line with the search for more 'authentic' forms of food culture rooted in nostalgia. Food chain trails can also help audiences reflect more deeply on the emotive question of the right balance between locally and foreign-sourced raw produce for Singapore's food security.

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8. Abbreviations

BH	Berita Harian
MT	Malaya Tribune
SFP	The Singapore Free Press
SFPMA	The Singapore Free Press and Mercantile Advertiser
ST	The Straits Times
STS	Sunday Tribune (Singapore)

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10. Appendices

The following appendices contain data and primary analysis undertaken during project research between October 2018 and October 2020. These were delivered to NHB at the end of the project. At the time of writing, Appendix 2 was being submitted to the National Archives of Singapore for permanent archiving.

Appendix 1	Summary report on oral history interviews by Fiona Lim
Appendix 2	Oral history audio files, synopses, transcripts and images
Appendix 3	Annotations – Newspapers
Appendix 4	Annotations – Cookbook Recipes
Appendix 5	Annotations – Malay and Chinese manuscripts
Appendix 6	Annotations – NAS oral histories (Chinese)
Appendix 7	Annotations – Pre-colonial Singapore
Appendix 8	Annotations and extracts – Annual reports of the Fisheries Department and related agencies, 1869-1969.
Appendix 9	Annotations – Periodicals
Appendix 10	Annotations – Memoirs, Travelogues, Fiction
Appendix 11	Screengrabs from old movies set in Singapore
Appendix 12	Bibliography – Secondary readings
Appendix 13	Publications and associated newspaper coverage of the Culinary Biographies Project up until Oct 2020