

“I Had No Time to Pick Out the Worms”: Food adulteration in Singapore, 1900–1973

Nicole Tarulevicz
University of Tasmania

Abstract

Food safety is a cultural construction, culturally and temporally specific. This paper is concerned with the particular food safety issue of food adulteration in the city-state of Singapore. Taking the five-part definition of food adulteration, published in a local newspaper in 1913 ahead of new legislation, as its structure, this paper examines how food adulteration was understood, subverted, regulated, prosecuted and eventually updated, to trace the institutional constructions and performances of food safety knowledges and their popular responses.

Introduction

From horsemeat in British frozen dinners to botulism scares in New Zealand baby formula, newspapers around the world have long exposed food scares and scandals. Food safety is a search topic that will turn up a profusion of stories and editorials in the archive of any newspaper of record right up to the present day. The newspapers of the densely populated and import-reliant city-state of Singapore are no exception. From the colonial era to the present, the Singapore press has brought to the attention of its readers the complex issues around food. From their newspapers and screens, Singaporeans learn about the substitution of cheaper ingredients to increase profits, about the adulteration of food with harmful chemicals and about deliberate food fraud. A common tendency now is to see this as a product of globalization and the industrialization of the food system. Globalization *has* complicated the food system, but issues of food quality have played out in Singapore since its days as a trading port of the British East India Company. Because Singapore does not have its own agriculture or water supply and has never has been self-sufficient, it is a fruitful focus for discussion of the complexities of food safety, especially food adulteration, in a

globalized food system. Singapore, in fact, provides us with a historical example anticipating the contemporary complexity in the food system.

Food safety is a cultural construction, culturally and temporally specific, which makes its representation in the contemporary press particularly relevant to our understanding of its significance. Governmental, cultural, religious and private actors work both against each other and in collaboration across the Singaporean food system to create the meanings of food safety. Food safety exists at the intersection of scientific realities, commercial imperatives and community practicalities. First as a colony, then as a postcolonial nation with a one-party system, the state and its bureaucratic subsidiaries—both institutions and individuals—have taken leading roles in the social construction of food safety in Singapore. Regulatory regimes create food safety environments, and understanding these connections helps us understand how the discourse around food safety has been shaped by and, in turn, shapes society. Taking as structural inspiration the five-part definition of food adulteration provided to readers of Singapore's *Straits Times* in 1913, this article examines how food adulteration was understood, subverted, regulated, prosecuted and eventually updated, to trace the institutional constructions and performances of food safety knowledges and the popular response to them until the introduction in 1973 of the new Sale of Food Act. Coincidentally, the period 1972–74 also saw the beginning of the move towards government control of news media in Singapore, including the *Straits Times*.¹

Singapore is a city-state and island-state; it is small—only 704 km² (272 sq. mi.)—with a population of roughly five million, of which one million are foreign workers. The Chinese majority population (76 per cent) coexists with Malay (15 per cent), Indian (8 per cent), and, in the words of the state, “Other” (1 percent) minority communities, forming a uniquely Chinese society in a predominantly Muslim and Malay region. Singapore was a nineteenth century British East India Company entrepôt port within Malaya. Because of its tax-free status, it quickly became one of the largest ports in the world, emerging as a center of exchange where different cultures and goods met. First as a colony and then as an independent nation, Singapore's size has belied its economic importance, and its focus on free trade has remained a defining characteristic. There is, however, some tension between

Singapore's history as a free port, with a *caveat emptor* attitude, and the developmentalism that produced staggering postcolonial growth. That is, there has always been tension between regulation and reality, between the freeness of the port/market and the colonial/postcolonial desire for order. Food adulteration is a site where we can see how these tensions played out in the period 1900–1973.

Adulteration and Regulation

Discourses of public health and hygiene cannot be separated from those of modernism because, as Dipesh Chakrabarty reminds us, “it is the language not only of imperialist officials but of modernist nationalists as well.” This is certainly true for Singapore, where both colonial and postcolonial officials have used regulation about public health and hygiene as a way of bringing order to disorder.² Waste, bodily and otherwise, must be regulated for fear of disease and social contamination, and the city itself is subject to purification.³ Historian Nayan Shah's work on the Chinese in San Francisco underscored the connection between literal and social contamination, both of which the British sought to control in Singapore.⁴ Descended from colonial-era categories, race in Singapore is particularly a legal construct. Court records and newspaper coverage in both colonial and postcolonial eras routinely record and report race as a matter of legal identity. Despite this overt legal visibility, my current research has not uncovered any obvious racial bias in the enforcement in the laws of adulteration. Merchants—including importers, shopkeepers, and street vendors—received the greatest scrutiny. The sale of food spanned social class and, consequently, race. Regulation of bourgeoisie bodies, as Peter Stallybrass and Allon White remind us, has been historically bound with the regulation of the city and the body of the Other.⁵ For Kabita Ray, writing in the context of colonial Bengal, food adulteration is not just a site of the imposition of colonial order, it is a *product* of British colonialism and the consequent mechanisms of order.⁶ Adulteration and the subsequent fight against it, then, can be understood as part of broader attempts at ordering and cleaning the city and the citizenry.

In the colonial era, Singapore's newspapers were filled with stories relating to food safety—food adulteration, tainted food, food poisoning (locally and across the Empire) and attempts in Britain and America to introduce legislation to ensure pure

food.⁷ Many articles from foreign newspapers were reproduced verbatim; the national context of the adulteration mattered less than reporting dramatic acts of deception.⁸ That this is an age-old problem is often mentioned. In a 1907 front-page article by the anonymous author “The Parsi,” Pliny the Elder, who died in the eruption of Mount Vesuvius in AD 79, is quoted as evidence of the antiquity of the problem of food adulteration: “Pliny complains that even wealth could not command purity.” But for “The Parsi,” there were shades of gray in the matter of adulteration, reflecting ideas about the cultural importance of specific foods. The fact that the “English Mustard factory, which, when mustard was dear, gave up the use of it altogether and got along with turmeric, cayenne pepper and flour, excites a sort of admiration and probably did no great harm,” but “the milkman who skims his milk, floods it with water and adds boric acid so that his stock may go on from day to day without loss or waste, should be shot at sight.”⁹ Milk mattered, mustard powder did not. Milk, for “The Parsi,” was European, and mustard, while still a European product, was made Indian with turmeric and cayenne pepper, and therefore less inviolate.

Having detailed global food scams, “The Parsi” turned to local matters and the need for strong legislation. The failure of legislation to deal with the adulteration of ghee in India, and more broadly in the British Empire, was a matter of distress. Noting that it was easy to detect foreign substances in ghee and condemning new laws that required identification but allowed adulteration, the author wrote: “But this time the law came to the rescue of the adulterator, and it was made legal to sell the vilest mixtures of fat so long as a sign was hung over the shop: ‘Vendor of adulterated ghee.’” Presaging the later discursively productive conflicts over the informed consumer, the problem, according to “The Parsi,” was that “the illiterate buyer has no hint given him that he is not buying the genuine item, and it is doubtful whether even those more learned appreciate the dire significance of this long word.”¹⁰ The feckless consumer, unable to discern quality and easily swindled, concerned many and resulted in 1914 in a new legislative framework for adulteration.

Sale of Food and Drug Ordinance (1914)

The introduction to Singapore of the Sale of Food and Drug Ordinance (1914) was heralded by newspapers full of stories outlining the need for the ordinance supported

by columns of evidence from government reports, statistics, anecdotes and so forth, all detailing food adulteration in Singapore. There was considerable cause for concern; over a two-year period, 1,613 samples of food were tested, of which 402 had been adulterated. The most frequently adulterated products were lime water (none of the samples were of suitable quality) and rice (82.9 per cent of the samples were adulterated). Among other foods with high adulteration rates were cheese (55 per cent) and canned vegetables (45.5 per cent).

Definitions of adulteration were helpfully provided in newspapers. A *Straits Times* editorial, for example, noted that the man in the street “seldom realizes it to mean anything more than putting chicory in coffee, or water in milk, or chemicals in beer,” and so provided this definition. Food was deemed to be adulterated:

(a) if anything has been mixed with it to reduce or lower its quality of strength; (b) or if anything inferior or cheaper has been substituted wholly or in part therefore; (c) or if any valuable constituent has been abstracted wholly or in part from it; (d) or if it consists wholly or in part of a diseased, decomposed or putrid animal or vegetable substance; (e) or if by colouring, coating or otherwise it is made to appear of greater value than it really is; (f) or if it contains any poisonous ingredient.¹¹

Therefore, adulteration could be the removal or addition of an ingredient, the inclusion of poisonous or putrid ingredients, but it could also be substitution and reduction of quality or deception of quality.

It is striking that the definition of adulteration in the *Straits Times* varied from that in the Sale of Food and Drug Ordinance (1914).¹² The legal definition of adulteration had only four clauses and used less colorful, more positive language—food is pure, sound and “undeteriorated”—rather than negative descriptors like diseased, putrid and poisoned.¹³ Using incidents from both before and after this adulteration taxonomy was published, this paper takes the definition of adulteration offered by the *Straits Times* rather than the legal definition. We can see quite clearly that all six of the *Strait Times* definitional clauses reflected practices of adulteration in

Singapore. This was the popular understanding of adulteration, for both consumers and perpetrators of adulteration.

(a) If Anything has been Mixed with it to Reduce or Lower its Quality of Strength ...

The adulteration of milk was the most commonly reported form of adulteration for much of Singapore's history. Milk was a high-risk product.¹⁴ Its production, involving collection from the teats of cows, has sometimes made it a vector for disease, but in Singapore the problem was adulteration with water. Although there were a few dairies in Singapore and a limited trade in fresh Singaporean and Malayan milk, most milk consumed in Singapore was canned, in either condensed or powdered form. Both fresh and canned milk were subject to dilution in order to increase the amount of product and profit. A 1906 case illustrates this well. Sanitary Inspector Glass encountered Saminathan, a milk seller, and in accordance with established procedure, purchased milk from his pail, sealed it in a container and took the milk for analysis. Half an hour later, Sanitary Inspector Plunkett also met Saminathan, purchased milk, and similarly submitted it for analysis.

According to news reports, the first sample was found by the health officer to have 39 per cent added water. The second sample had 50 per cent added water content. In the course of the half hour between purchases, the milk had been diluted a further 11 per cent. Saminathan was fined \$20 for each offence, with no legal differentiation between the 39 and 50 per cent adulteration.¹⁵ The *rate* of adulteration did not matter, only the fact of adulteration.

The prevalence of adulterated milk led many milk companies to engage directly with the language of adulteration in their newspaper advertisements. Bear Brand milk, for example, proclaimed that "its purity and creamy richness are fully preserved by a modern method of packing which renders adulteration or contamination impossible."¹⁶ Consumer reliance on canned and condensed milk was a direct response to the adulteration of milk. Consumers were willing to have milk with water added to it, but only if they were making the addition themselves, although even some canned milk was adulterated. Milk adulteration by water was, as

Municipal Analyst A.G. Harington put it in a lecture at the YMCA, actually evidence of an inability to do worse: “the fact that water adulteration was the only one practiced in Singapore, was due to the natives not being sufficiently ‘educated’ to practice the more subtle forms of adulteration.”¹⁷ Adding water to milk may not have been sophisticated, but it was prolific.

Dilution of alcohol, especially whiskey and brandy, was also a recurrent problem. But, as Municipal Analyst Harington noted, since spirits were generally diluted with water and sugar, the “commonest forms of adulteration, therefore, were helpful rather than harmful, from the temperance standpoint.”¹⁸ Despite the efforts of the Singapore Temperance Institute, Harington’s anti-alcohol perspective was not shared by all, and there are numerous examples of fines and prosecutions for watering down alcohol. There was also concern that brandy was adulterated with fusel oil (chiefly amyl alcohol—a poisonous by-product of distillation, typically discarded) and that raw grain spirits were being added to whiskey. The fear of fusel oil was so strong that a 1932 advertisement for Australian brandy included a statement that the brandy was “made from pure grape spirits without any adulteration and is entirely free from fusel oil.”¹⁹

In a 1928 case, Exshaw Brandy was found to be adulterated by the addition of water and, later, by inferior brandy. The adulteration happened in Singapore after importation but before sale.²⁰ A decade later, water was added to whiskey at the Arcade Restaurant. The restaurant claimed that four Sikhs had ordered three whiskey ayers and one brandy ayer (served with a cube of ice), but after being told the price, they walked out without consuming their drinks. The bar boy claimed that he had poured the (iced) drinks back into their respective bottles, thus diluting the whiskey and brandy. Despite claiming ignorance of the practice, the proprietor was fined \$60.²¹ In this example it is unclear how intentional the adulteration was; certainly there was no obvious gain for the bar boy, but what is of interest is that adulteration in this case was at the site of consumption.

(b) Or if Anything Inferior or Cheaper has been Substituted Wholly or in Part Therefore ...

The adulteration of coffee was not as common as milk adulteration but was still quite prevalent and a subject of common complaint. As early as 1896 the practices surrounding coffee adulteration were being documented in newspapers. In January of that year, the Aden Chamber of Commerce (representing British commercial interests in the Yemeni port) issued a circular denying a rumor that coffee from Java and Singapore was adulterated.²² The practice of increasing the weight of coffee beans by leaving them out in the dew overnight was lamented in an article published two months later, and the problem was racialized as one affecting coffee beans “prepared for sale by Chinese.”²³ Chicory was a common addition to coffee, substituted as a cheaper product, usually only in part. In one instance, coffee beans were adulterated with dried peas, and the supplying merchant was prosecuted, not the owner of the coffee shop who claimed that he was “ignorant” of the adulteration.²⁴

Coffee was also adulterated with powdered gambier, a vegetable astringent and common additive in leather processing, which the editor of the 1907 *Eastern Daily Mail and Straits Advertiser* was quick to tell readers “is sure to produce constipation in a healthy individual if taken internally even if taken in a small quantity.”²⁵ The clear intention of these adulterations was profit by fraud, convincing the consumer that they were purchasing coffee but increasing profits by substituting part of the product with cheaper filler. By mid-century this discursive emphasis by the press on the embodied effects of substitution gave way to an emphasis on local consumer languages and Imperial law.

As one 1959 headline put it: “Maize powder *plus* smell of Coffee.” This case was complicated by the honest labeling of the product; Chop Teck Ming Coffee Factory labeled their product in English as “Maize powder” and made no mention of coffee beyond their company name. The manufacturer, Wee Boon Chye, said he had sold it as maize powder, adding some coffee “to make it smell pleasant.” He received a \$25 fine and not the maximum \$4,000 fine because, on account of the labeling, it could not be proved that he had adulterated coffee.²⁶ The intention to deceive is critical in prosecution. English was the language of governance and of empire, but not necessarily the language of the consumer. Retailers, who were the site of

regulation, were able to game the system, adhering to the letter of English language law while deceiving in the vernacular.

An exposé in 1966 of local “gourmet powder” (monosodium glutamate, MSG) adulteration involving twenty shops had both safety and economic implications. The “rampant smuggling” of MSG into Singapore from Hong Kong (as much as 30 tons a month) was suggested to be caused by the high prices and widespread adulteration. To avoid locally packaged adulterated products, consumers sought imported items. But the Controller of Customs found multiple examples of local products being deceptively packaged into “tins bearing imported brand names.” Cleaning up the local industry was not just a way of protecting consumers from harmful substitutes; it was a way of protecting the economy from smuggling and fraud.²⁷

The cosmopolitan consumer might be deceived by adulterated imports, but the naïve native citizen was also at risk. In 1968 the Department of Chemistry found that many of the MSGs they tested were adulterated with lactose, sodium chloride and tetrasodium pyrophosphate, and “in two cases the gourmet powder was adulterated with more than 90 per cent of sodium pyrophosphate and in another case with 89 per cent lactose.” Lactose was not harmful but clearly met the definition of a cheaper or inferior substitute. An amendment to the Food and Drugs Regulations earlier that year stipulated that substances claiming to be MSG had to contain “not less than 98 per cent monosodium glutamate” by dry weight.²⁸ Despite these requirements, in 1970 Federal Chemical Industries, a local MSG producer, complained of unfair competition in the Singapore MSG market. Smuggling and adulteration were cited, as were unfair practices, such as counterfeit brands and shorted weights. There were also issues with MSG manufacturers from “across the Causeway” (meaning Malaysia), who were the source of “most of the imitations.” Once again, consumers were easily duped: “Most of the imitations are sold in outlying villages and kampongs where people are not so quick in detecting the adulterated goods.”²⁹ MSG enhances flavor, but adulterated MSG enhanced constructions of difference, connecting social class to geography.

(c) Or if any Valuable Constituent has been Abstracted Wholly or in Part from it

...

But even cosmopolitan supermarket shoppers had to be wary. Cold Storage, a leading supermarket chain, was repeatedly fined in the 1970s for selling dairy products with insufficient fats—ice cream that failed to meet Singapore standards and yoghurt with 1 per cent fat rather than the required 2 per cent minimum. Cold Storage was unhappy with this definition of adulteration because their yoghurt met US dairy standards, they had not added any impurity to the product and its low-fat qualities were in fact popular with some customers.³⁰ Just as adding water to brandy was adulteration, so was removal of valuable constituents, wholly or in part. The effects of this definition can be seen more clearly in discussions relating to rice adulteration.

Rice, as a common staple item, was for decades subject to many schemes for increasing profit. In the 1960s, high quality rice was mixed with lower quality rice, creating mixed grade rice,³¹ and in 1909, merchant Sin Choo Kim was accused of using a tampered weighing machine to shortchange customers.³² In a more infamous case in the same year, 160 bags of rice were stolen and substituted for older rice from the same company.³³ Rice could be adulterated in many ways, but one of the most remarkable is that it could be adulterated through polishing. Rice, as one article noted, “loses a considerable proportion of its virtue in the process of polishing and it is in that manner apparently, that adulteration is present.”³⁴ The association between polished rice and beriberi was cited. Removing the husk of rice (polishing it) increases its storage life, but the husk contains thiamine (B₁) and its removal can lead to beriberi in a diet that is heavily rice-dependant and low in other sources of thiamine (beef, pork, chicken, eggs, seeds, some green vegetables, and some fruits). Polishing rice, although it may be desired for longevity, is still adulteration.

(d) Or if it Consists Wholly or in Part of a Diseased, Decomposed or Putrid Animal or Vegetable Substance ...

Ice cream was an ongoing product of concern, especially during the 1950s. While it had been heralded as beneficial to health as far back as 1775,³⁵ it had remained a food of concern internationally for a century.³⁶ In Singapore, the acting municipal health officer, W.C. Hutchinson, wrote directly to the 1950 Hawker Inquiry Commission

about the perils of ice cream, recommending that it be banned in hawker centers (street food vending locations), but the Commission, recognizing the great demand for ice cream in the tropics, chose instead to regulate rather than prohibit.³⁷

The tropical conditions and venues posed real health risks: water-borne diseases could be spread if the scoops were washed in dirty water; contaminated milk and cream used in ice cream-making could transmit disease; ice cream vendors were potential carriers of disease; and hawker centers attracted disease-ridden vermin. The Singaporean preference of regulation over prohibition sought to remove these threats by policing the regulations, insisting vendors get licenses and publicizing problems. In a 1954 article, for example, the upcoming changes in licensing were detailed (“coffee shops and eating houses will have to get new endorsement on their licenses if they want to sell ice cream in the future”), but so too were the risks of ice cream, most notably the risk of typhoid from contaminated dairy products. The City Health Officer, Dr H.R. Morrison, was quoted as saying: “Ice cream is a very, very rich food. If ices are not handled hygienically, they become a lethal weapon,” a typhoid weapon.³⁸

Adulteration in the form of diseased and decomposed animals frequently featured in international news stories, and English-literate Singaporean readers were as familiar with the horrors of putrid meat in Chicago as with rotten fish in Singapore.³⁹ The sale of spoiled canned goods was a particular problem. In 1907 the problem of sea-damaged, expired “tinned provisions” that were auctioned rather than destroyed was raised in the Municipal Report. Although they were sold as “unfit for human consumption,” these items could be on-sold, and there was concern that this happened regularly.⁴⁰ Almost half a century later, “Anxious” of Singapore, writing to the *Straits Times* in 1952, was still expressing anxiety about the auctioning of these items.⁴¹ The deliberate sale of rotten, diseased, decomposed or putrid items included weevils and maggots in Chinese flour and the illegal butchering of sick animals.⁴²

The most regular offence, however, was the sale of rotten fish. Having received numerous complaints about the quality of fish sold by Chua Joo Lee, a fishmonger at the Balestier Road market, Mr Cuckney, the inspector of markets,

found 15 catties (a Chinese measure equaling roughly one pound) of rotten fish; the “accused pleaded guilty and was fined \$10.”⁴³ Typically, little defense was offered in cases of selling rotten fish. In April 1916, three fishmongers were fined. Only one offered any kind of defense, and although that offender did not express regret at the state of his fish or disagree that it was unfit for human consumption, he did offer the titular comment: “I had no time to pick out the worms.”⁴⁴ Fundamentally, his defense was of the product’s appearance, not of rot or parasites.

(e) Or if by Colouring, Coating or Otherwise it is Made to Appear of Greater Value Than it Really is ...

Once water or other adulterants had been added to a product, the color often changed. Additional coloring was then required to hide the adulteration. A 1906 newspaper article intended as guidance for “the average housekeeper,” described a series of tests for detecting adulteration, many of which relied on color changes for the detection of the addition of color. In the absence of an ongoing relationship of trust with a vendor, the consumer’s best defense was constructed here as an informed gaze. According to this article, milk adulterated with water often had a bluish tinge, so to disguise this, a dye was added to make the milk appear a creamy color. Housekeepers were encouraged to test suspicious milk by pouring a glass and leaving it for twelve hours. In this pre-homogenization era, any cream in the milk would separate and rise to the surface. If, however, “the lower layer is yellow, artificial colouring matter has been employed.” And if there was no creamy layer, this might be because vinegar and aniline dye had been added to produce a curd, imitating creaminess, which, in turn, could be detected by “a distinct orange colour” in heated milk and cream. But if cornstarch had been added to thicken milk and cream in the making of ice cream, this could be detected by adding a little iodine to the suspect ice cream, and “a deep blue color is instantly developed if corn starch is present.” A variant of this test could also be applied to suspect cream of tartar if first dissolved in a water solution.⁴⁵ A little technological assistance was needed to sharpen the consumer’s gaze.

Extracts, including vanilla, were also subject to fraud. Completely fraudulent “vanilla” products were made not of a vanilla bean suspended in alcohol but of artificially prepared vanillin and cumarin, with the addition of caramel coloring. The

test the “average housekeeper” was expected to perform to determine the quality of her vanilla extract was quite complicated. A measure of the extract was to be placed in a saucer and set over a boiling teakettle until it had evaporated by half. Cold water was then to be added, sufficient to make the solution up to the original volume. The process effectively removed the alcohol, “rending the residual liquid densely cloudy and a dirty brownish color.” But if the test were conducted on a fraudulent sample, then the solution would be clear.⁴⁶ A less complicated, although slightly riskier method of testing was also proposed: the average housekeeper could acquire “a little sugar of lead solution,” which as the newspaper noted is poison, and add this to the extract. A true vanilla would give an “abundant yellowish brown precipitation and a pale yellowish straw colored liquid,” while the lead solution would have no effect on fake vanilla extract. Color was thus something added to a product to deceive but also a mechanism by which the deception could be revealed.

The addition of chicory to coffee could likewise be revealed by its color. Adding the suspect coffee powder to a glass of cold water provided two color tests. True coffee floats in cold water and does not initially color the water, so the absence of color forms a test. Chicory sinks and leaves “brown trails of color” as it does so. But not all tests were so simple, and despite the claim that “the detection of aniline dyes is simple,” an elaborate method (involving vinegar ammonia, water, a pot, white wool “or a nun’s veiling”, making a paste of the wool, boiling multiple times, and testing sample) is detailed over several paragraphs. Bright colors appear to be indicative of artificiality or adulteration. Bright green canned peas or beans probably indicated the presence of copper or iron. If ketchups, sauces, jams, jellies, canned fruits and tomatoes were bright red, then this could be aniline dye. Yellow mustard powder, extract of lemon, or noodles could again be aniline dye. “Abnormally white” foods, including corn, indicated bleaching agents.⁴⁷ Whether or not Singaporean housekeepers performed these tests is irrelevant; their discursive presence in the popular press worked to construct the consumer as knowledgeable and empowered.

(f) Or if it Contains any Poisonous Ingredient ...

Certain items are in and of themselves poisonous, such as some mushrooms, and these items regularly injured or killed people when they were accidentally eaten or added to

otherwise good foods.⁴⁸ Foods could become poisonous with the passage of time, as with the old fish served in the tuberculosis ward of the Singapore General Hospital in 1966, which was so rotten that the patients boycotted their lunch.⁴⁹ Or food could become poisonous through accident or carelessness, as with barley that was contaminated with an arsenic insecticide when “stacked too close to poisonous substances.”⁵⁰ Adulteration via contamination was generally accidental, the result of carelessness or accident. After several instances of rice contamination, for example, separate regulation was introduced by the Motor Transport Department requiring all vehicles that carried sodium arsenite to be “thoroughly washed” before any other goods were moved in the same vehicle.⁵¹ The line between carelessness and commercially-driven corner-cutting could be slim.

Food poisoning cases—from mild to deadly, local and international—filled many newspaper columns. Poisoned wedding banquets in India, bad school lunches in Britain, royal upset stomachs, and the food poisoning suffered by Somerset Maugham all featured.⁵² The punishment of local perpetrators, such as coolie Tan Mock Chwee, convicted of murder for putting arsenic in the evening meal of eighteen people and killing one, was well covered. That case raised issues around the easy availability of poisons, and the coroner, Lieutenant-Colonel Hope-Falkner, was quoted in several newspapers as saying there is “no semblance of control over unqualified charlatans and their drugs in Singapore.”⁵³ Regulation was the solution as far as the coroner was concerned: the open market was too open and potential consumers of poisoned food needed to be protected.

A Lack of Commercial Morality Versus Consumer Sovereignty

As demonstrated by the varied issues that fell under the Food and Drug Ordinance (1914), the decades before and including the 1930s were critical to the construction of the consumer in Singapore. In 1937 Dr R.B. Hawes, professor of medicine at King Edward VII College of Medicine, gave a well reported speech on what he called Singapore’s “lack of commercial morality,” its “commercial immorality.” Hawes made no distinction between producers and merchants. That is, while he identified goods imported from China, especially canned goods, as a problem (“imported in a terrible state... poisonous condition... in old tins that have been used for other

purposes, frequently badly soldered and only half cleaned”), and the producers as only interested in profit, it was the shopkeepers who swindled consumers. Adulteration of milk and ghee (“so adulterated with cheap oils that much of it could never have seen a cow”), mustard oil (“sometimes adulterated by our commercial moralists with actually poisonous oils”), and dhal (“poisonous cheap seeds are mixed with it to increase profit”) were offenses at the point of sale, not production.⁵⁴

Hawes was not interested in financial solutions, such as paying workers a greater wage so that they could afford better quality food. The suggestion made by Jawaharlal Nehru, leader of the Indian National Congress, on his trip to Malaya in April 1937, that Tamil coolies should be paid the same wages as Chinese workers was dismissed outright by Hawes: “As every employer knows, a Chinese can and does work very much harder in this country than the Tamil can.”⁵⁵ That a better paid Tamil worker might be able to purchase higher-quality dhal, or non-adulterated ghee, does not seem to have occurred to Hawes, who did not attribute to these workers any volition or knowledge. Yet it is most likely that as consumers they were well aware of the poor quality of the goods they purchased; adulteration was not a surprise but an unavoidable consequence of their economic situation.⁵⁶

Employers could have effected change through wage increases, but Hawes’s approach instead required market reforms for pre-market paternalism, suggesting that employers should feed their workers. He cited as an example the quality of the work of Tamils in the regiment of Carnatic Pioneers in India. These men were given a “well-balanced diet in Army rations” and, as a consequence, could “shift earth with a speed that would make his Chinese competitor gape with wonder.”⁵⁷ A transformation of the race was possible in Hawes’ view: “If estates in Malaya could feed the labourers, the labour forces in a few years would appear a different race to those one sees now.”⁵⁸ Safe food is clearly transformative, but here food quality and safety were deeply bound with ideas of race and progress. The coolies were not yet ready, in Chakrabarty’s sense of the waiting room of history, “never quite ready,” to make responsible food choices.⁵⁹

In an anonymous letter to the editor of the *Singapore Free Press and Mercantile Advertiser*, “Itinerant Vendor” offered a stern rebuke to Hawes and to the

newspaper for “glibly repeating” Hawes’ words. In a rare example of giving agency to the consumer, the writer argued that the “Asiatic consumer is discriminating, as to quality and quantity in his simple purchases, to a degree undreamt of by Dr Hawes,” and cited William Hutt’s influential *Economists and the Public* (1937): “the nature of the product is fairly clear to the consumer and he will soon know of any material changes in quality.” The letter continued: “Any coolie knows if provisions are bad or short weight without official assistance, but who is there to measure the services rendered by the department in which Dr Hawes works?”⁶⁰ Political economist W.H. Hutt’s concept of consumer sovereignty was being deployed here, what Hutt understood as “the free and effective expression of all human preferences in respect of ends which are confronted with scarce means.”⁶¹ In this concept, the consumer is constructed as fully formed and informed.

A “Taxpayer” was not convinced by “Itinerant Vendor’s” letter, and asked if the author had gone “to a kedai (shop) in Serangoon Road and made his purchases there for his daily consumption?” “Taxpayer” thought “Vendor” had not and proposed that “it will be instructive for him to do so and his experience will be a reminder that where ignorance is bliss it is folly to be wise,” the implication being that wisdom here would be experienced at a gastrointestinal level.⁶² “Taxpayer’s” consumer is embedded in the hustle and bustle of Serangoon Road, and he is insisting on the importance of lived experience.

Hawes’ speech had wide impact. H.W. Raper, a member of the Legislative Council, was “alarmed” by Hawes’ comments on poisonous foods and the state of canned foods imported into Singapore and called for “an inquiry to be made into the real state of affairs.” Colonial Secretary Alexander Small agreed to an inquiry and commented that the process of devising rules for the regulation of food and drugs was underway, and he hoped that with cooperation “we may be able to do something to improve the situation, assuming it as bad as it has been suggested.”⁶³

Criticism also came from China. The *Straits Times* reported on coverage in the Shanghai-based *People’s Tribune* expressing concern about Hawes’ comments and the subsequent media furor. The reputational damage being done to Chinese manufactures was a particular concern. There was disbelief at Hawes’s “staggering

assertion” and simultaneously a call for “prompt action” to prevent the “shipment of ‘poisonous’ foods.” The cooperation of the public health authorities in Singapore to prevent their import was called for, and it was noted that this “would be greatly appreciated by those Chinese canners who have no reasons to be ashamed of their products.”⁶⁴ Legislation, regulation, and prosecution were the mechanisms proposed by establishment actors for keeping consumers safe from food adulteration and fraud.

Lack of Confidence in Regulation

Yet, there was a lack of confidence in the effectiveness of laws and their ability to protect consumers. Echoing the technological search of chemistry to reveal adulteration, manufacturers of refrigerators offered their technology as a solution to some of the fears of food safety. They could not keep the food from being adulterated, but they could help the consumer keep their food cold, contained, and safe. As the cultural historian Susanne Friedberg notes, “the refrigerator stood out among appliances. It was part of a larger system that connected people and places in new ways, and by doing so it transformed what it meant to be a food consumer.”⁶⁵ Refrigeration companies advertised actively during the 1930s and 1940s, and while refrigeration purported to keep food safe, the claim relied on the original food being pure and unadulterated.

An advertisement from Westinghouse, for example, stressed the importance of keeping foods below the “danger line” of 50°F. Consumers were told: “Above this lurks the source of many human ills—below this is safety—crisp fruits and vegetables, fresh milk and meats, delicious ices.”⁶⁶ But effective refrigeration relied on the meat being safe and the ice unadulterated ahead of their storage. Safe products are rendered unsafe by temperature as in another 1938 Westinghouse advertisement: “in a single drop of milk at 58°F... bacteria increases to several millions in just a few hours.”⁶⁷ The milk here is a potential threat—temperature can keep it safe only if it is pure to begin with. The seals and chill of the refrigerator separates food from hot, wet, stinking, poisonous, worms of grotesquery.

But city officials were waging what seemed to be an unwinnable war against diseases, dirt and adulteration. On the regulatory side, the continued press reporting

of details of these battles highlighted progress and simultaneously reinforced fear. In a typical article, the work of Singapore's food inspectors was celebrated ("the constant watch on the Singapore retail market by three City Council food and drug inspectors has improved the quality of food stuffs now sold in the Colony"), but the ongoing nature of the problem was also detailed. Readers were told that at least fifty percent of fresh milk was adulterated, roast maize was added to coffee, wheat starch was added to coriander powder and cooking oils were adulterated.⁶⁸ The solution reified the problem. We can understand this newspaper coverage and these officials as collaborators in the construction of bureaucracy and the institutional construction of knowledges about adulteration and food safety and regulation more broadly—which returns us to Chakrabarty's order of aesthetics, where ideals of public health cannot be separated from the language of modernity or from the management of public space.⁶⁹

The 1958 article discussed above continued the praise and fear approach, but with the addition of a growing emphasis on the role consumers should play. The amount of adulterated foods was detailed (20,240 lb of milk and milk products, and 28,551 lb of meat and meat products), and a long list of adulterated products from vinegar to pepper powder was included. Constructing consumers as both subjects and citizens, the article asked them "to come forward and tell the Council when they suspected adulteration," but even the consumers' credibility was questioned: "The City Analyst, Mr. T.A. Spillance, said most of the people had become so accustomed to adulterated drinks, especially coffee, and food that they could not tell the difference between the genuine and the spurious stuff." Spillance, the article states, also noted that many offenders had previous convictions and continued to adulterate foods after prosecution, and he wanted people to realize that "city officials would always help and cooperate with them."⁷⁰ Spillance seems at least battle-weary. But he was right. Issues of food adulteration are still with us in the twenty-first century, and recent scandals such as melamine in Chinese milk would be easily recognizable to him.

Conclusion

The Sale of Food Act (1973) replaced existing legislation and fractionally shifted the definition of adulteration. The four clauses of the 1914 definition remained, but there

was an additional clause that extended the definition of adulteration to include food that “contains any substance which renders the food injurious to health.”⁷¹ The social meaning of adulteration was, however, more captured by the popular newspaper definition. Writing in the British context, Keir Waddington reminds us that knowing about adulteration and harm does not necessarily mean a change in consumption patterns.⁷² Adulteration evokes rotting flesh and putrid vegetables; it is visceral, dirty, and corrupt. The law may have tied up legal meanings of adulteration but cultural understandings of adulteration linger, and consumers want and need protection from harm—bodily and fiscal.

If we understand adulteration as a subset of food safety, we can see that in an increasingly complex global space, it is a political and social issue that is here to stay. But as “The Parsi” wrote in his 1907 letter, it is hardly a new phenomenon. A particular challenge for securing food safety is the complex interconnecting links of a globalized food system. As Arjun Appadurai noted, globalization is a complicating force and “forms of circulation continue to interact with the circulation of forms to produce new cultural configurations in which locality always takes surprising new forms.”⁷³ Legitimate trade and unofficial markets intersect these commodity circuits—legal and illegal, old and new—to produce new products and new adulterations.⁷⁴ When it comes to food safety the tendency is to see these complications as recent, but as we have seen they are very recognizable.

Using the five-part definition of food adulteration provided by the *Straits Times*, the definition that dominated popular understandings in Singapore, we can see that adulteration comprised many and varied phenomena. It incorporated the watering down of milk and whiskey, the removal of fats in yoghurt and ice cream, and the addition of color to deceive. It was intimately connected with constructions of the consumer as victim, as knowing, as subject and as citizen. Adulteration took place within the borders of the nation-state as shopkeepers adulterated their products, and outside of the nation-state as merchants refilled old cans with poisonous goods in China. For Singapore, there is not a pre-industrial halcyon past based on an imagined rural food system where there was pure food. Obviously, Singapore has benefited from innovations in technology and from increased regulation of food-related

industries, but these have not eliminated the adulteration of food. The worms may have been picked out, but sometimes the fish is still adulterated.

For correspondence: nicole.tarulevicz@utas.edu.au or nicki.tarulevicz@gmail.com. I would like to thank the two anonymous reviewers for their very helpful comments, and for the stimulating introduction to Kabita Ray's work. Eric Anderson, Howard Gilbert and Sheila Allison all provided much appreciated critiques of drafts of this article.

Notes

¹ While this article is not intended as a discussion of the colonial press in Singapore, the sourcing of material from contemporary English-language newspapers warrants a brief contextualization, particularly of the *Straits Times*, the most frequently quoted of the newspapers in this article and the one about which there is information pertinent to the 1906–73 period. Founded in 1845, the *Straits Times* became known during the 1908–26 editorship of Alexander W. Still as the “Thunderer of the East” (after the London *Times*). It survived its rivals and is regarded by historians of British Malaya as a newspaper of record. The newspaper split in two in 1972 and soon came under government control. Cheah Boon Kheng, review of *Dateline Singapore: 150 Years of the Straits Times*, by C.M. Turnbull. *Journal of the Malaysian Branch of the Royal Asiatic Society* 69/2 (1996): 116–19.

² Dipesh Chakrabarty, *Habitations of Modernity: Essays in the Wake of Subaltern Studies* (Chicago: Chicago University Press, 2002), 66.

³ Dominique Laporte, *A History of Shit*, trans. Nadia Benabid and Rodolphe el-Khoury ([1978]; translation Cambridge, Mass.: MIT Press, 2000).

⁴ Nayan Shah, *Contagious Divides: Epidemics and race in San Francisco's Chinatown* (Berkeley: University of California Press, 2001), 1.

⁵ Peter Stallybrass and Allon White, *The Politics and Poetics of Transgression* (Ithaca: Cornell University Press, 1986), 126.

⁶ Kabita Ray, *Food For Thought: Food adulteration in Bengal 1836–1947* (Calcutta: Papyrus, 2003), 339.

⁷ “Adulteration in America: Remarkable revelations in the Senate,” *Straits Times*, 30 July 1906.

- ⁸ “How to Tell Pure Olive Oil,” *Eastern Daily Mail and Straits Morning Advertiser*, 19 July 1907. Article reproduced from the *New York Herald*.
- ⁹ “The Parsi,” “Adulteration,” *Eastern Daily Mail and Straits Morning Advertiser*, 19 July 1907.
- ¹⁰ “The Parsi,” “Adulteration.”
- ¹¹ Editorial, “A Shocking Record,” *Straits Times*, 19 September 1913.
- ¹² Both the newspaper definition and the legal definition drew on British legislation and jurisprudence, specifically the 1875 Sale of Food and Drug Act, and the amended act of 1899. See Jim Phillips and Michael French, “Adulteration and Food Law, 1899–1939,” *Twentieth Century British History* 9/3 (1998): 356. The Singaporean act has resonances with other international definitions of adulteration, including the American definition of the time. See Wesley E. Forte, “The Food and Drugs Administration and the Economic Adulteration of Foods,” *Indian Law Journal* 11/2 (1966): 347.
- ¹³ Sale of Food and Drug Ordinance (1914), Section 16.
- ¹⁴ Jacob Steere-Williams, “The Perfect Food and the Filth Disease: Milk-borne typhoid and epidemiological practice in late Victorian Britain,” *Journal of the History of Medicine and Allied Sciences* 65/4 (2010): 523.
- ¹⁵ “Police News: Milk adulteration,” *Eastern Daily Mail and Morning Advertiser*, 11 July 1906.
- ¹⁶ Bear Brand advertisement, *Straits Times*, 7 December 1932.
- ¹⁷ “What Shall We Eat?,” *Singapore Free Press and Mercantile Advertiser*, 7 June 1911.
- ¹⁸ “Foods and Drinks: How some Singapore swindles are perpetrated,” *Straits Times*, 6 May 1909.
- ¹⁹ Advertisement for Tolley Scott and Tolley Ltd Brandy, *Singapore Free Press and Mercantile Advertiser*, 4 July 1932.
- ²⁰ “Licensee Charged: Adulteration of Exshaw Brandy,” *Straits Times*, 27 March 1928.
- ²¹ “Water Added to Whisky and Brandy,” *Straits Times*, 4 November 1938.
- ²² “Coffee Adulteration,” *Straits Times*, 7 January 1896.
- ²³ “Coffee Adulteration,” *Straits Times*, 2 March 1896.

- ²⁴ “Peas As Coffee! Discovery in upcountry coffeeshop,” *Straits Times*, 13 December 1934.
- ²⁵ “Coffee Adulteration,” *Eastern Daily Mail and Straits Morning Advertiser*, 20 September 1907.
- ²⁶ “Maize Powder Plus Smell of Coffee: \$250 fine,” *Straits Times*, 24 September 1959.
- ²⁷ “A Harmful Mixture in ‘Gourmet Powder’ Warning,” *Straits Times*, 16 July 1996.
- ²⁸ “Too Much Acid Found in Sauces, Drinks,” *Straits Times*, 6 April 1970.
- ²⁹ Chia Seng Chwee, “MSG Market: Complaints of ‘unethical’ competition,” *Straits Times*, 24 August 1970.
- ³⁰ “Supermarket fined \$850 for Selling Contaminated Food,” *Straits Times*, 2 February 1978.
- ³¹ “Rice Adulteration, Price Tags and Taxes,” *Straits Times*, 1 July 1967.
- ³² “Magistrates’ Appeals: Convictions upheld,” *Singapore Free Press and Mercantile Advertiser*, 17 March 1908.
- ³³ “Police News: The Borneo Company rice fraud,” *Straits Times*, 3 April 1907.
- ³⁴ Editorial, “A Shocking Record,” *Straits Times*, 19 September 1913.
- ³⁵ Jeri Quinzio, *Of Sugar and Snow: A history of ice cream making* (Berkeley: University of California Press, 2009) 50.
- ³⁶ Edward Geist, “When Ice Cream was Poisonous: Adulteration, ptomaines, and bacteriology in the United States, 1850–1910,” *Bulletin of the History of Medicine* 86/3 (2012): 343
- ³⁷ *Hawker Inquiry Commission* (Singapore: Singapore Government, 1950), 15.
- ³⁸ “Health Clamp on Ice Sale: Only clean shops, cafes to get permits,” *Singapore Free Press*, 3 November 1954.
- ³⁹ “Dark Secrets Exposed: The frauds of the tinned meat trade,” *Straits Times*, 26 July 1906.
- ⁴⁰ “Our Municipal Administration in 1906,” *Eastern Daily Mail and Straits Morning Advertiser*, 16 July 1907.
- ⁴¹ “Anxious,” “Unfit for Human Consumption,” *Straits Times*, 24 May 1952.
- ⁴² “Mutton Dealers Charged,” *Straits Times*, 18 January 1932.
- ⁴³ “Wednesday,” *Weekly Sun*, 2 November 1912.
- ⁴⁴ Untitled, *Straits Times*, 13 April 1916.

- ⁴⁵ “How to Detect Impure Food: Tests which can be made by the average housekeeper,” *Eastern Daily Mail and Morning Advertiser*, 17 October 1906.
- ⁴⁶ “How to Detect Impure Food.”
- ⁴⁷ “How to Detect Impure Food.”
- ⁴⁸ “Poison Mushroom Danger,” *Straits Times*, 10 November 1962.
- ⁴⁹ “Lunch Boycott,” *Straits Times*, 9 December 1966.
- ⁵⁰ “Barley Still On Sale,” *Singapore Free Press*, 8 September 1959.
- ⁵¹ “Lorries Must be Washed,” *Straits Times*, 5 March 1950.
- ⁵² “Maugham Better,” *Straits Times*, 13 November 1958.
- ⁵³ “The Poison Peril,” *Malayan Saturday Post*, 24 December 1927.
- ⁵⁴ “Poisonous Foods Imported into Malaya: Dr. R.B. Hawes on lack of commercial morality,” *Singapore Free Press and Mercantile Advertiser*, 11 June 1937.
- ⁵⁵ “Poisonous Foods Imported into Malaya.”
- ⁵⁶ James Francis Warren, *Rickshaw Coolie: A people’s history of Singapore, 1880–1940* (Singapore: Singapore University Press, 2003), 146.
- ⁵⁷ “Tappers Would Work Harder on Right Diet: Better Tamil physique in few years, says Dr. Hawes,” *Straits Times*, 11 June 1937.
- ⁵⁸ “Whatever You Like To Eat Is Wrong,” *Singapore Free Press and Mercantile Advertiser*, 11 June 1937.
- ⁵⁹ Dipesh Chakrabarty, *Provincializing Europe: Postcolonial thought and historical difference* (Princeton: Princeton University Press, 2000), 8.
- ⁶⁰ “Itinerant Vendor,” Letter to the editor, “Does the Coolie Know?,” *Straits Times*, 7 July 1937.
- ⁶¹ William Harold Hutt, “The Concept of Consumer’s Sovereignty,” *Economic Journal* 50/97 (1940): 77.
- ⁶² “Taxpayer,” Letter to the editor, “The Coolie and His Foodstuffs,” *Straits Times*, 7 July 1937.
- ⁶³ “Poisonous Food Imports Inquiry: Sequel to Dr Hawes’ recent warning,” *Straits Times*, 15 June 1937.
- ⁶⁴ “China View of Singapore ‘Bad Food’ Outcry,” *Straits Times*, 6 August 1937.
- ⁶⁵ Susanne Freidberg, *Fresh: A perishable history* (Cambridge, Mass.: Harvard University Press, 2009), 45.

⁶⁶ Westinghouse Refrigerator advertisement, *Singapore Free Press and Mercantile Advertiser*, 19 February 1934.

⁶⁷ Westinghouse Refrigerator advertisement, *Straits Times*, 11 December 1938.

⁶⁸ “50 p.c. of Milk Sold by Vendors is Adulterated – Says S’pore City Analyst,” *Singapore Free Press*, 3 December 1952.

⁶⁹ Chakrabarty, *Habitations of Modernity*, 66.

⁷⁰ “Cheating in Foods and Vitamins Still Rife in S’pore,” *Singapore Free Press*, 30 August 1958.

⁷¹ Sale of Food Act (1973), Section 25.

⁷² Keir Waddington, “‘We Don’t Want Any German Sausages Here!’ Food, fear and the German nation in Victorian and Edwardian Britain,” *Journal of British History* 52/4 (2013): 1042.

⁷³ Arjun Appadurai, *The Future as Cultural Fact: Essays on the global condition* (London: Verso, 2013), 4.

⁷⁴ Arjun Appadurai, “How Histories Make Geographies: Circulation and context in a global perspective,” *TransCultural Studies* 1 (2010): 1.