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# *Contested Colonial Metrological Sovereignty: The daching riot and the regulation of weights and measures in British Malaya\**

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## **Abstract**

Drawing on materials from the National Archives of Malaysia, newspapers, literature on historical metrology, and the colonial history of Malaya, this article weaves a social history of Malaya's colonial metrological reform by taking into account the roles of both European and Asian historical actors. Prior to the 1894 reform, people in Malaya used customary scales and weight units, which varied across districts, for commercial transactions. Initiated by colonial administrators, the reform was both welcomed and resisted. In 1897, a riot against the Sanitary Board broke out in Kuala Lumpur for its attempt to mandate that previously exempted traders use only government-verified and -stamped scales. The colonial government managed to maintain order and restore its authority at the end of the riot, but four types of merchants—goldsmiths, silversmiths, opium dealers, and drug sellers—managed to remain exempted. Metrological reform continued to be contested in the following century, but the central concerns of the regulation moved from easing taxation, facilitating cross-district trade, and taming Chinese traders to protecting consumers.

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More emphasis was placed on educating the public to be able to read scales, in addition to using police force to raid businesses. The enforcement was, however, compromised due to inadequate funds. The reality on the ground contradicts the image of an omnipresent colonial authority and reveals the fragility of colonial administration.

## Introduction

Weights and measures are fundamental to trade, commerce, industry, medicine, and many other fields of past and present society, and from time immemorial, ‘the notion of measure is associated with cheating’.<sup>1</sup> While ensuring that sellers use fair weights and measures is a matter of immense concern in everyday market transactions, the place of metrology in the history of Malay(sia) is very much obscure despite its significance. Drawing on materials found in the Arkib Negara<sup>2</sup> and English and vernacular newspapers, this article reconstructs social meanings, from both colonial and native perspectives, of weights and measures in British Malaya. By bringing together two disparate bodies of literature, namely the colonial history of Malaya and historical metrology, this article enriches the history of British Malaya with the story of metrological reform while countering Eurocentric perspectives in historical metrology.

Historical metrology, whether derived from practical judiciary needs to solve disputes between peasants and the gentry in feudal society, driven by scientific curiosity, or undertaken to defend feudal lords’ interests, is a field of historical study that aims to gain insights from past knowledge of weights and measures.<sup>3</sup> Despite starting as an auxiliary discipline to history and archaeology, historical metrology began to raise sociological questions since the 1970s, such as what social conditions facilitate or slow down metrological reform or the reasons for the presence or absence of anti-reform movements.<sup>4</sup> Hector Vera has identified three different dimensions of historical metrology: ‘instruments and techniques’; ‘the measurers or persons who do the measuring and the organizations they work for’; and ‘the broader institutional orders and

<sup>1</sup> Witold Kula, *Measures and Men* (Princeton, NJ: Princeton University Press, 1986), p. 3.

<sup>2</sup> The National Archives in Kuala Lumpur. Materials from the Arkib Negara will be labelled ‘AN’ followed by the accession number.

<sup>3</sup> Kula, *Measures and Men*, pp. 90–93.

<sup>4</sup> Otis Dudley Duncan, *Notes on Social Measurement: Historical and Critical* (New York: Russell Sage Foundation, 1984), pp. 12–38.

systems of belief.<sup>5</sup> Taking into consideration all these dimensions, historical and social studies of metrology are capable of revealing the social conditions and relations that shape metrological practices and standards of a particular society. However, the social studies of metrology must look beyond ‘the construction [of metrology] *by* society’ to also investigate ‘the construction *of* certain societies’, while new metrological practices and standards shape social relations in return.<sup>6</sup>

In general, sovereignty denotes the supremacy of an authority over particular areas. Premised on this understanding, the right of jurisdiction and oversight over the units of measure is ‘a fundamental attribute of sovereignty’, as Kula argues in his classic work on historical metrology.<sup>7</sup> In the pre-metric era, control over weights and measures was a site of bitter battles and contestations, both between cities and between states and municipality. Contemporary metrological reform, often initiated by state administrators, not only involves ‘assertions of state sovereignty’, but also ‘yield[s] bodies of knowledge that typically increase the capacity of state agencies to act at a distance, and provide forms of leverage over local practices’.<sup>8</sup> From this perspective, state-imposed metrological reform, with or without the aid of scientists and the support of traders, can be conceived of as statecraft. Nonetheless, as pointed out by many studies, attempts to control, impose, or change metrological practices and standards tend to spark ‘resistance’ or ‘explosive reactions’ as the states intervene in disparate elements and threaten pre-existing immensely diverse measures in societies.<sup>9</sup>

<sup>5</sup> Hector Vera, ‘Weights and Measures’, in *A Companion to the History of Science*, (ed.) Bernard Lightman (Chichester: John Wiley and Sons, 2016), pp. 459–471.

<sup>6</sup> Joseph O’Connell, ‘Metrology: The Creation of Universality by the Circulation of Particulars’, *Social Studies of Science*, 23(1), 1993, pp. 29–173, emphases in original.

<sup>7</sup> Kula, *Measures and Men*, pp. 18–23.

<sup>8</sup> Bruce Curtis, ‘From the Moral Thermometer to Money: Metrological Reform in Pre-Confederation Canada’, *Social Studies of Science*, 28(4), 1998, pp. 547–570.

<sup>9</sup> Duncan, *Notes on Social Measurement*, pp. 12–38; Vera, ‘Weights and Measures’, pp. 459–471; Michael D. Gordin, ‘Measure of All the Russias: Metrology and Governance in the Russian Empire’, *Kritika: Explorations in Russian and Eurasian History*, 4(4), 2003, pp. 783–815; Simon Schaffer, ‘Metrology, Metrication and Victorian Values’, in *Victorian Science in Context*, (ed.) Bernard Lightman (Chicago: University of Chicago Press, 1997), pp. 438–473; James C. Scott, *Seeing Like A State: How Certain Schemes to Improve Human Condition Have Failed* (New Haven: Yale University Press, 1998); Stefan Timmermans and Steven Epstein, ‘A World of Standards but not a Standard World: Towards a Sociology of Standards and Standardization’, *Annual Review of Sociology*, 36, 2010, pp. 69–89.

Using colonial metrological reform as a starting point, this article is a historical and social study of colonial society in British Malaya.<sup>10</sup> Unlike the metric reform in late eighteenth-century Europe, which was initiated by scientists, weights-and-measures regulations were a colonial administrator-imposed reform in late nineteenth-century British Malaya, at a historical juncture when trade activities were dominated by Chinese immigrants.<sup>11</sup> This article contributes to the colonial history of Malaya by reconstructing various layers of social relations through the study of metrological reform and the ensuing social responses. We view the use of *daching* and *liteng*,<sup>12</sup> customary scales brought in by Chinese traders and widely used across various states in the Malay Peninsula long before regulation came into force, as an area of contact between people of diverse classes, tastes, views, and values, between traders and colonial inspectors, and between immigrants of different ethnic backgrounds. In Kula's words, this helps us to 'uncover [the] social meaning' of weights and measures. Such an approach allows us to evade Eurocentric, state-centric, and top-down perspectives, which frequently treat metrological reform as a diffusion of science and technology from the imperial centre to colony and as a method of promoting trade modernity.<sup>13</sup> We also pay attention to the agency of various historical actors, European and Asian, elite and working-class. As succinctly put

<sup>10</sup> The existing Malaysian literature begins with the implication of the Weights and Measures Act 1972 on the practice of Islamic tithing in the country, and literature from before this time is absent. See A. R. Azman, D. N. A. Said, H. Hafidzi, and A. A. Sa'dan, 'Calibration of Gantang (*Sa'*) Based on Metric System for Agricultural Zakat in Malaysia', *ASM Science Journal*, 9(2), 2015, pp. 17–28.

<sup>11</sup> For the 'scientists as pioneers' narratives of metrological reform in Europe and North America, see Gordin, 'Measure of All the Russias'; O'Connell, 'Metrology: The Creation of Universality', pp. 29–173; Schaffer, 'Metrology, Metrication and Victorian Values', pp. 438–473; Henri Moreau, 'The Genesis of the Metric System and the Work of the International Bureau of Weights and Measures', *Journal of Chemical Education*, 30(1), 1953, pp. 3–20.

<sup>12</sup> Both are balance scales or equivalents of the English steelyard. *Daching* (大秤) are big counterweight balance scales, which usually come in different capacities, and *liteng* (厘戥) are small scales measuring weights of under one tahl (equivalent to 33.33 grammes) and were widely used in the transaction of precious stones, gold, silver, medicine, and opium.

<sup>13</sup> Commonly found in the literature of policy studies that are usually written by policy consultants, such as the work of V. M. Ogryzkov, 'National Standardization and Metrology in Developing Countries', *Izmeritel'naya Tekhnika*, 4, 1970, pp. 16–21; and V. V. Zuikov, 'Problems and Prospects of Metrology in Developing Countries', *Izmeritel'naya Tekhnika*, 10, 1970, pp. 79–81.

forward by James C. Scott, details got lost from ‘the state’s narrow frame of reference’.<sup>14</sup> Nonetheless, we hold the view that it is equally important not to miss two significant perspectives: that metrology is a site of sovereignty assertion and contestation, and that metrological reform is a matter of statecraft. Both constitute the wider context in which various historical actors respond to the issues pertaining to weights and measures. While reading along the grain of both colonial archives and English newspapers is required to reconstruct the views of the colonial administrators, reading *against* the grain of the same sources and consulting vernacular newspapers are useful for gaining counter perspectives. Rumours, as will be shown later, constitute another significant native perspective. As cogently argued in subaltern historiography, rumours are a genre of rebel communication.<sup>15</sup>

Why did the colonial authority regulate weights in British Malaya in the first place? What was its impact on society? How did the local actors respond to and influence the reform? We shall answer these questions here.

### **Regulation of weights: colonial and native actors**

Despite being a core part of trade and commerce, weights and measures remained unregulated in Malaya until the passing of the 1886 Weights and Measures Ordinance in the Straits Settlements (SS hereafter).<sup>16</sup> The same law was later duplicated and known as the Weights and Measures Regulations in the states of Perak and Selangor in 1893, which came into effect in February 1894, and were extended to more districts and states in the following two decades. Prior to reform, commercial transactions and taxation were largely conducted with customary weighing methods and units, which varied across different districts.<sup>17</sup> Archival records of communication between colonial officers in the late nineteenth century suggest that regulations were as much out of taxation concerns as much as they were a response to complaints

<sup>14</sup> Scott, *Seeing Like a State*, p. 13.

<sup>15</sup> Anjan Ghosh, ‘The Role of Rumour in History Writing’, *History Compass*, 6(5), 2008, pp. 1235–1243.

<sup>16</sup> Formed in 1826 and consisted of Penang, Malacca, and Singapore. Other administrative units, such as the Dindings, were added or removed over time.

<sup>17</sup> *Chupa* and *gantang* are among the native units of measurement for capacity and *pikul*, catty (or *kati*), and *tahil* for weight.

about the rampant use of false *daching* in the market.<sup>18</sup> Lack of uniform weights across districts had caused confusion and revenue loss in import and export duties. In an examination of 40 shops by the superintendent of police in Kuala Lumpur in 1882, many were found to have short measures.<sup>19</sup> The global debate of standardization and the desire to impose imperial weights and measures in the colony also informed metrological reform in Malaya. In a report on weights and measures, Alfred R. Venning, state treasurer of Selangor, hoped that, with the reform, ‘standard measures of extension, of weight and of capacity in the whole Peninsula may be assimilated to those in use in the United Kingdom’.<sup>20</sup> Equally important is the timing of the reform, which coincided with the colonial authority’s increasing grip on more and more aspects of colonial society, especially the control over what were considered ‘unruly’ elements in the Chinese immigrant community, whose population was rapidly rising.<sup>21</sup> The formation of the Federated Malay States (FMS hereafter), a federation of four states (Selangor, Perak, Negeri Sembilan, and Pahang) in the Malay Peninsula in 1895, is another sign of British government’s widened control over the Malay Peninsula. Initiated at this historical juncture, metrological reform was simultaneously a move to assert colonial sovereignty over matters regarding weights and an act of colonial statecraft.

Before the regulation was put in place, police stations in various districts would procure standard scales of various capacities. The price of a scale ranged from one dollar to over four dollars, depending on its capacity.<sup>22</sup> The request to furnish police stations with standard weights and scales, however, did not come solely from British administrators.<sup>23</sup>

<sup>18</sup> [1892] Asks for a decision on the regulation of the *daching* for mercantile business’ (AN: 1957/0030113); ‘[1892] Enquires what *daching* should be used in weighing gulla and rattans for the collection of export duty’ (AN: 1957/0033557); ‘[1892] Regarding the use of false *dachings* in the markets and shops in KL’ (AN: 1957/0035681).

<sup>19</sup> [1883] Forwards a “*Daching Kechil*” and B/L’ (AN: 1957/0002106).

<sup>20</sup> [1892] Reports on weights and measures’ (AN: 1957/0032053).

<sup>21</sup> See J. G. Butcher, *The British in Malaya, 1880–1941: The Social History of A European Community in Colonial Southeast Asia* (Oxford: Oxford University Press, 1979); J. G. Butcher, ‘The Demise of the Revenue Farm System in the Federated Malay States’, *Modern Asian Studies*, 17(3), 1983, pp. 387–412.

<sup>22</sup> [1894] Requests to procure from a licensed dealer certain stamped *daching* and measures’ (AN: 1957/0425562).

<sup>23</sup> [1883] Requisitions for standard *dachings*, *gantangs*, *chupas*, 1/2 *chupa* measures and yard measures’ (AN: 1957/0002695); [1884:] Report that a Chinaman was brought up for using false weight. Requisition for standard *dachings* and measures’ (AN: 1957/0003751);

Some leading Chinese were as concerned about the issue of ensuring correct weights and more efficient methods of weighing tin. In 1891, Chow Ah Yok or Chiew Yoke, a Chinese merchant who was also a committee member of the Kuala Lumpur Sanitary Board, urged the government to keep standard *daching* in the Central Police Station so that small tin traders, who could not afford to buy one, could have access to accurate scales.<sup>24</sup> In 1894, a group of over 50 Chinese tin miners even signed a petition to urge the Selangor government to replace *daching* with the more efficient American-made Fairbanks Scales—a type of platform scale for heavy objects, to weigh their tin slabs.<sup>25</sup> These were among the cases that indicate that native historical actors were not passive in reforming matters related to weights. After the regulations were passed, several significant changes may be noted. The duty of examining *daching* was transferred from the police department to the Inspector of Weights and Measures, who worked under the Sanitary Board. Only officially verified and stamped weighing scales were allowed for commercial and industrial use and no traders were permitted to make or sell weighing devices without a licence. But mandatory verification and stamping only applied to large *daching*, while *liteng* or small customary scales under one *tahil* used for retail transaction in the bullion market, and opium and drug shops were exempted. There were three different stories explaining why small scales were exempted: *liteng* was too small and thus stamping was impractical,<sup>26</sup> the lack of standard weights under one *tahil* to test small scales;<sup>27</sup> and the British government tended to respect native practices, including the use of customary small scales, in its colonies and protectorates.

The metrological reform at once created a new trade of inspecting, selling, and manufacturing weighing instruments. Singapore was already a centre of *daching* trade, and the very first licensed dealer in Selangor, Vong Sam, approved in 1894, would procure scales from across the

‘[1887] Applies for a supplementary vote of \$25 to meet payment of 500 dachings’ (AN: 1957/0008475).

<sup>24</sup> ‘[1891] Standard government dachings [*sic*] to be kept at the central police station for the use of petty traders’ (AN: 1957/0028270).

<sup>25</sup> ‘[1894] Asks that tin be weighed with Fairbank’s scale instead of dachings’ (AN: 1957/0052084).

<sup>26</sup> This is stated in Section Eleven of the regulation.

<sup>27</sup> ‘The Selangor Riots’, *The Straits Times*, 8 March 1897, p. 2; ‘The strike in Kuala Lumpur (original title: 吉隆罷市續聞)’, *Lat Pao*, 10 March 1897; ‘[1915] Law regarding weights and measures’ (AN: 1957/0185005).

Straits of Tebrau.<sup>28</sup> Despite Vong Sam's desire to monopolize the trade of selling and manufacturing *daching* in the state, which was revealed in a letter from L. B. von Donop, Acting Chairman of the Sanitary Board, urging the Selangor government to issue a licence to Vong Sam,<sup>29</sup> there were seven licensed dealers of weights and measures altogether in Selangor by 1896. In 1920, the number of licensed dealers increased to 25. Among the licensed dealers were Chow Kit and Co. and Chan Sow Lin and Co., owned and run by two leading Chinese, who each applied for a licence in 1906 and 1913, respectively. Prior to this, Chan Sow Lin's company was once caught and prosecuted for making weights without a licence. In the pre-war years, a licence to sell weights and measures cost 12 dollars, while a manufacturing licence was 30 dollars.

### ***Daching* riot: resistance against metrological intervention**

When the Weights and Measures Regulation was about to be enforced in Selangor, A. R. Venning anticipated no serious disturbances to trade, but he did expect some opposition from the traders.<sup>30</sup> He was not the only one who anticipated this coming. Some of his contemporaries in Europe had already warned that metrological reform was very likely to invite opposition in many parts of the world for interfering in customary practices.<sup>31</sup> Three years after Selangor's Weights and Measures Regulation was enforced, a riot broke out on the fourth and fifth of March 1897 in protest against the Kuala Lumpur Sanitary Board for its attempt to make all Chinese traders, who dominated the market in town, use government-verified scales.<sup>32</sup> In the process of maintaining order, a Malay police constable mistakenly fired on the rioters, injuring two and killing one Chinese.

A report written by G. T. Hare, appointed Secretary for Chinese Affairs in the FMS a month before the riot broke out, is by far the most detailed

<sup>28</sup> The strait between Singapore and Malaysia, also referred to as the Strait of Johor.

<sup>29</sup> '[1894] License to Vong Sam to sell dachings asks to grant' (AN: 1957/0048575).

<sup>30</sup> '[1892] Reports on weights and measures' (AN: 1957/0032053).

<sup>31</sup> Edward Nicholson, *Men and Measures: A History of Weights and Measures—Ancient and Modern* (London: Smith, Elder and Co., 1912).

<sup>32</sup> Two historians, J. G. Butcher and J. M. Gullick, mentioned the riot in their works, but only in passing. J. G. Butcher, 'Towards the History of Malayan Society: Kuala Lumpur District, 1885–1912', *Journal of Southeast Asian Studies*, 10(1), 1979, pp. 104–118; J. M. Gullick, *A History of Selangor 1766–1939* (Kuala Lumpur: The Malaysian Branch of the Royal Asiatic Society, 1998), pp. 199–200.



account of the disturbance and its causes, albeit from the perspective of managing social order and upholding colonial sovereignty.<sup>33</sup> A chain of events a few months before the outbreak led to the disturbance. On 27 January 1897, 20 Chinese medicine vendors in the town jointly sent a petition to the chairman of the Sanitary Board since they had been previously informed by the Inspector of Weights and Measures to bring their scales forward for verification and stamping. They asked that the small customary scales they used be exempted, like their counterparts in other parts of the British empire, including Hong Kong, Singapore, Malacca, Penang, and Perak, which had similar regulations. Although Section Six of the regulation expressly rendered lawful dealings made with customary local weights and Section Seven clearly stated that small scales used in retail transactions of gold, silver, precious stones, drugs, and opium were exempted from regular verification and stamping, F. C. Stapleton, Inspector of Weights and Measures in Selangor, purportedly under orders from the chairman of the Sanitary Board, raided three Chinese shops on 19 February 1897. The three traders—one druggist (Ban Shan Chan), one opium shopkeeper (Sin Hong Li), and one goldsmith (Chheng Seng)—were later summoned, charged, and fined for using ‘false’ *daching* on 23 February 1897. Led by three Chinese—a goldsmith (Chau Heong), a court runner (Teng Chu Ling), and an opium shop owner (Iap Thien Pao)—a group of outraged traders held a community meeting in the Sin Tze Si Ya Temple on High Street<sup>34</sup>—a place that then functioned like a town hall among the working-class Chinese immigrants. A decision was made to hand a petition appealing the sentence, dated 25 February 1897 and signed by over 100 traders of all classes, to the newly appointed Protector of Chinese, G. T. Hare.<sup>35</sup> The petitioners had no objection to large *daching* being regularly verified and stamped by the government, but they wished for small ones to be exempted. According to their plan, a strike would take place if the Chinese Protector failed to help the affected retailers and hucksters.

Upon meeting the petitioners on 1 March 1897, Hare advised the traders to collect funds to hire a counsel to appeal the decision, promised to investigate and handle the dispute well, and arranged for a

<sup>33</sup> [1897] Closing of Chinese shops at KL in connection with some action taken by the Sanitary Board under weights and measures regulation’ (AN: 1957/0069232). The following account is primarily synthesized from Hare’s report, unless otherwise indicated.

<sup>34</sup> It is known as Jalan Tun H. S. Lee today.

<sup>35</sup> G. T. Hare was FMS Secretary for Chinese Affairs from 1897 to 1906.

meeting with the traders and the Kapitan Cina<sup>36</sup> on 4 March 1897. As knowledgeable as Hare was about various customary weighing instruments of the Chinese, which had grown out of centuries of use and adaptation by different trades and professions, he was sympathetic to the petty traders affected by the Sanitary Board's new legal exercise. Back then, a *liteng* from China cost only one to five cents. Hare was of the view that any attempt to force the Chinese petty traders to use government scales would cause much hardship. Immediately after receiving the petition, Hare carried out a thorough investigation. He was of the opinion that what Stapleton had done exceeded the instruction from the Board, and both the Sanitary Board Chairman and the magistrate had interpreted the regulation incorrectly. He suggested that the Board make no further prosecutions until a retrial of the three cases was settled. Despite the fact that the Board's meeting on the morning of 4 March reached a conclusion that was in line with Hare's suggestion, a crowd of about 2,000 people poured into the town, all shops except Loke Chow Kit's were closed, and a riot broke out in the afternoon on the same day.<sup>37</sup> Several shops, largely owned by the Cantonese, in Petaling Street, Market Street, Rodger Street, High Street, and Sungai Besi were looted, and the worst damaged was Vong Sam's. The value of all the property looted was estimated at some \$9,000. Meanwhile, a 'rumour' had been circulating that Vong Sam was at the bottom of all the trouble since he had urged the Sanitary Board to prosecute traders who used unverified and unstamped *liteng*, so that he could secure a Weights and Measures Farm.<sup>38</sup> In regards to spreading 'rumours', both *Lat Pao* and *Penang Sinpoe*, two Chinese dailies based in Singapore and Penang, respectively, consciously exercised much self-restraint without sensationalizing the issue during the riot. But just how the 'rumour' spread through informal channels could not be evaluated.

<sup>36</sup> A headman of Chinese community recognized by the colonial authority. Yap Kwan Seng, of Hakka descent, was the fifth and the last Kapitan Cina of Kuala Lumpur from 1889 to 1902.

<sup>37</sup> 'Strike (original title: 罷市)', *Penang Sinpoe*, 9 March 1897. This is the only source that mentions the number of rioters.

<sup>38</sup> The revenue-farm system was a tax system that ensured a stable tax revenue for infrastructure construction while permitting the Chinese to run and expand the wheel of commerce. It also allowed the Chinese community to practise self-governance while saving British resources, since they did not need to create a police force. See Butcher, 'The Demise of the Revenue Farm System in the Federated Malay States'; F. A. Swettenham, *British Malaya* (London: John Lane The Bodley Head, 1907).

In his report, Hare called the riot an act of treason orchestrated by a handful of ‘unscrupulous characters’. He believed that Vong Sam was merely a victim of a widely spread rumour and only a few ringleaders were responsible for the disturbances. It is not entirely clear whether Vong Sam had no intention to monopolize the trade, as Hare had stated. The veracity of the rumour cannot be cross-checked and established due to the paucity of relevant records. What can be confirmed is that Vong Sam had previously expressed his desire for a monopoly when he was made the first licensed dealer in town in 1894. Hare, who had just assumed the office of Chinese Secretary in early 1897, probably had no knowledge of Vong Sam’s past. Even if the information regarding Vong Sam was false, it is more rewarding, as argued by Luise White, to read rumour as a reliable historical source that traces ‘the very act of talking about others’. Instead of examining the truthfulness of a rumour, it is much more revealing to see it as a form of information manipulation, through which people create, catalogue, and enforce ‘ideas about deviance and virtue’.<sup>39</sup> In other words, even if the message was untruthful, it constituted a voice and a view, shared among people who spread the rumour, against collusion between native actors and colonial authorities, and against colonial encroachment on a previously autonomous sector. By condemning acts that harmed the interests of certain sectors in the Chinese community (in this case the monopoly of *daching* trade and state intervention in customary practice), people who spread the rumour constructed a discourse of immorality and legitimized the action they were about to take. Put into perspective, the rumour about Vong Sam, in the words of Ranajit Guha, serves at once a ‘trigger and mobilizer’ of subaltern insurgency.<sup>40</sup> Just as importantly, rumours are not an autonomous category, but a deployment,<sup>41</sup> which creates ‘hierarchies of credibility’.<sup>42</sup> Hare discredited the rioters’ story by labelling it a rumour, but the contradictory accounts from both parties immediately reveal the agency of the colonized subjects as well as the weaknesses of a colonial state.

How far the larger Chinese community, especially the traders and workers, were complicit was as obscure in Hare’s report. As far as Hare

<sup>39</sup> Luise White, ‘Between Gluckman and Foucault: Historicizing Rumour and Gossip’, *Social Dynamics*, 21(1), 1994, pp. 75–92.

<sup>40</sup> Cited in Ghosh, ‘The Role of Rumour in History Writing’, p. 1236.

<sup>41</sup> White, ‘Between Gluckman and Foucault’, p. 76.

<sup>42</sup> Laura Ann Stoler, ‘“In Cold Blood”: Hierarchies of Credibility and the Politics of Colonial Narratives’, *Representations*, 37, Special Issue, Winter 1992, pp. 151–189.

wanted to believe that only a few lawless characters were responsible for the strike, a commentary suggested otherwise. While Hare thought the traders were largely victims who had been terrorized by the ringleaders into participating in the strike, the commentary, on the contrary, was of the view that the riot would not have taken place without the support of the larger Chinese community, especially the Chinese employers who let their workers out to participate in the riot.<sup>43</sup> The fact that the traders in town insisted that they would resume business and the crowd would disperse only when those arrested during the riot were released seems to also suggest the voluntary complicity of many within the Chinese community.<sup>44</sup> In view of all available records, the possibility that the affected traders might have actively engaged 'rough characters', who were probably thought to be experienced, strategic, and skilful in mobilizing the masses, must not be ruled out. Nonetheless, the determination of whether these leading 'rough characters' and the rioters who took things to the street were real protesters against unjust state intervention or simply criminals who exploited the tense situation after the *daching* raid for their personal gain is difficult. It is also noteworthy that most of the shops looted were largely owned by the Cantonese, while those involved in looting were a mix of people who spoke different dialects. To what extent the disturbance was a case where gangsters of one dialect group took advantage of the situation as revenge against their nemeses who spoke another dialect, as implicitly hinted at in Hare's report, is difficult to establish too.

Obviously, several strands of social forces were in play prior to the riot. Each might have influenced the strike in its own way. The Chinese immigrants were not a homogeneous community, but divided along the lines of trade, class, dialect, and other differences. Some were friendly to the British, while some others were less so. The strike could be seen as a defence of one's community's interests or treason against the colonial state, depending on where one stood. For the affected Chinese traders and their supporters, the raid against unverified small *daching* was an encroachment on a previously autonomous field of customary practice and the strike an uprising against unjust state intervention. The colonial state actors were just as heterogeneous. While some administrators were more concerned with asserting colonial sovereignty

<sup>43</sup> See commentary in 'Untitled', *The Singapore Free Press and Mercantile Advertiser*, 16 March 1897, p. 3.

<sup>44</sup> 'The Origin of the Strike (original title: 罷市顛末)', *Penang Sinpoe*, 16 March 1897.

over *daching* matters, others were more sensitive to customary practices and sympathetic to the hardship of the immigrant community. But in the moment of violence against colonial sovereignty, the need for maintaining order and restoring authority became a shared concern among many colonial administrators. Armed Sikh police forces were called in to put down the riot. Instead of punishing and antagonizing the entire Chinese community, the colonial authority resorted to singling out names and banishing a few ‘unruly’ characters.<sup>45</sup> It was a calculated strategy to scare the community by punishing just a few characters.

Even though the Selangor government managed to restore order and its authority, it dropped its attempt to control small customary scales used by goldsmiths, silversmiths, opium dealers, and drug sellers for over four decades without mandating regular verification and stamping. The exemption by no means implied that traders who used fraudulent small scales were immune from investigation and prosecution. According to the regulation, once a complaint was lodged against a trader for using fraudulent scales, regardless of size and capacity, they would be investigated. If found using weights that were less than declared, they would be prosecuted. Many newspaper reports on cases of fraudulent scales used in the exempted trades affirm that this was the case. Meanwhile, Inspector F. C. Stapleton, who was thought to have acted beyond his power in the raid, was transferred to Perak immediately after the riot. In his report, Hare admitted that ‘the government has been out manoeuvred by the ringleaders’.

### ***Daching as a metaphor of illegibility***

At the turn of the twentieth century, the British continued to expand their influence over all aspects of Malaya and gradually do away with the self-government status of the Chinese immigrant community. The office of Kapitan Cina and the revenue-farm system were abolished in 1902 and 1909, respectively, both of which marked the end of the autonomous status of the Chinese community. From time to time, the government continued to pay periodic and surprise visits to shops and businesses that used weighing instruments. Traders who were found cheating were arrested, and those who possessed unverified and

<sup>45</sup> ‘Banished from Selangor’, *The Singapore Free Press and Mercantile Advertiser*, 28 May 1897, p. 2.

tampered *daching* prosecuted and fined 25 dollars for each false device. Weights-and-measures regulations remained a contested area, even though there were no further riots. Instead, concerned members of the public would pressure the government to be more rigorous in regulating fraudulent weights, including the small ones used in retail transactions.<sup>46</sup>

While old issues regarding *daching* remained, new ones were raised. The issue of 'short weight' continued to capture the attention of many, but people began to ask how to differentiate erroneous *daching* measurements caused by deliberate tampering from inaccuracies resulting from overuse and misuse of the scales. The former should be punishable, but not the latter.<sup>47</sup> The discussion was inconclusive because it was rather difficult to make a distinction between these two different cases. Instead, a suggestion was made that both the seller and the purchaser be present at the site where the scale was located to monitor the process of weighing and thus avoid dispute. This immediately brought up a different issue: how knowledgeable were the buyers at reading a scale? Since most Chinese traders were inclined to use customary *daching* imported from China, the Chinese markings on the scale-beam were rendered 'mystic' in the eyes of many European administrators and consumers. Both Chinese characters as well as *daching* with Chinese markings immediately became metaphors for illegibility, which was directly associated with cheating and anachronisms. While the intention to ensure correct weight was noble, the debates of accurate weight were, however, often racially tinged and ideologically charged. Some Europeans began to discredit Chinese-made *daching* on the grounds that they were marked with only Chinese characters, and thus prone to abuse and inaccuracy.<sup>48</sup> As one European commented, 'the public [were] entirely at the mercy of Chinese dealers who [were] not over-honest with their antiquated scales of picul and *daching*.'<sup>49</sup> In response, colonial administrators in some districts suggested that characters other than Chinese should be added to these *daching*.<sup>50</sup>

<sup>46</sup> 'Opium and Weight', *The Straits Times*, 12 December 1898, p. 3.

<sup>47</sup> 'Weights and Measures', *The Singapore Free Press and Mercantile Advertiser (Weekly)*, 4 June 1908, p. 354.

<sup>48</sup> See 'Our Scales and Weights', *Eastern Daily Mail and Straits Morning Advertiser*, 13 December 1907, p. 2. Later in the 1930s, some Malay consumers too complained against the illegibility of Chinese markings and asked to replace them with Arabic numerals instead. See 'Daching Markings', *The Straits Times*, 9 February 1936, p. 4.

<sup>49</sup> 'Untitled', *The Singapore Free Press and Mercantile Advertiser*, 13 December 1911, p. 6.

<sup>50</sup> '[1914] Daching weights-marking characters other than Chinese' (AN: 1957/0177664); '[1920] Dachings-figures other than Chinese-marking of' (AN: 1957/0212134); '[1921] Rules under the Weights and Measures Bill' (AN: 1957/0215825).

Language diversity, as rightly observed by Rachel Leow, had always posed a challenge to colonial governance in polyglot British Malaya. The Chinese language, and especially its proliferation of dialects, was perceived as a form of ‘disorder’ that reigned in the form of illegibility and incomprehensibility, which subsequently called for taming.<sup>51</sup> However, it is worth noting that the only Chinese characters on a *daching* were those signifying the manufacturer’s brand, while the graduation marks consisted of only lines and dots on its beam. Bringing up illegibility of Chinese characters in the *daching* debate was merely used to justify the phobia of Chinese-made scales. How far the suggestion to add non-Chinese characters was adopted is not entirely clear. In the meantime, it was also proposed that *daching* should be replaced with the ‘better understood English scales’. In 1922, 150 British-made Salter spring scales of three different capacities of 14, 18, and 50 pounds, respectively, were procured by the Negeri Sembilan government.<sup>52</sup> Even though it was commonly understood among many colonial administrators that spring scales were more prone to slack and rarely accurate unless new, the self-registering nature of a spring scale rendered it legible to Europeans.<sup>53</sup> Unlike *daching*, the spring scale was associated with ‘modernity’, which was often wrongfully conflated with ‘accuracy’.<sup>54</sup>

Chinese traders were obviously at the receiving end of racial discrimination, since the issue of erroneous scales was constructed as a ‘Chinese problem’, but this is not at all an indication that stories of cheating were entirely a colonial fabrication. This is not to romanticize customary practices and traders of any class or ethnic group, since deceitful transaction was not uncommon, but not limited to traders of one particular social group, instead involving merchants of diverse backgrounds. This is affirmed by countless cases of dishonest traders of different ethnic backgrounds documented in not just English newspapers, but in the vernacular dailies too. As much as the colonial administrators wanted to ensure correct weights and protect the

<sup>51</sup> Rachel Leow, *Taming Babel: Language in the Making of Malaysia* (Cambridge: Cambridge University Press, 2016).

<sup>52</sup> ‘Untitled’, *The Straits Times*, 24 June 1922, p. 8.

<sup>53</sup> The discussion on the shortcomings of spring scales was not uncommon. For example, see ‘[1921] Rules under the Weights and Measures Bill’ (AN: 1957/0215825) and a commentary in ‘Week and Topics’, *Singapore Free Press*, 3 September 1923, p. 6.

<sup>54</sup> ‘[1949–1959] Weighing scales—weights and measures enactment’ (AN: 1957/0297738); ‘[1953] Request from UMNO working committee to use the English weighing machine in place of *daching* (local weighing device)’ (AN: 1973/0000856).

consumers, insufficient manpower and inadequate funds for travel allowances to conduct examinations of commercial scales in remote districts challenged their aspirations to extend the reach of the state surveillance—a problem that became even more severe after the Second World War.<sup>55</sup> This reality on the ground contradicts the image of the omnipresent colonial authority and reveals, in Rachel Leow's words, 'the brittleness and fragility of colonial rule'.<sup>56</sup> The problem of inadequate manpower and resource persisted until governance moved away from using coercive and police force and towards a more consumer-centred approach in the 1920s, when suggestions were first made to place official standard scale in every market so that customers could check the weight of their purchases.<sup>57</sup> With the new approach, regulations naturally departed from criminalizing vernacular weights and measures to educating the public and schoolchildren to becoming more *daching* literate. But the feasibility of this measure was greatly compromised, again, due to inadequate funds. How far the regulation of weights and measures could go relied very much on the revenue collected from examination and licensing fees. The colonial authorities had been careful not to raise these fees, since they felt it was likely to invite strong opposition and create another disturbance. Consequently, the issue was dropped for nearly two decades until 1940, when N. R. Jarret, the Food Controller of Malaya, discredited the Chinese *daching* on the grounds that tampering was rather common among retailers. He urged the FMS government to install official spring scales in various markets to allow customers to measure the weight of their merchandise. He reasoned that the measure was 'in the interest of the poorer and more ignorant classes'.<sup>58</sup> It was not until after the Second World War that the measure was widely experimented with in the markets of different states and much welcomed by some consumers.<sup>59</sup>

<sup>55</sup> '[1907] Regarding weights and measures, Kuala Pilah' (AN: 1957/0435822); '[1946] Proposal to transfer Inspectorate of Weights and Measures to municipalities and town boards' (AN: 1957/0291347).

<sup>56</sup> Leow, *Taming Babel*, p. 38.

<sup>57</sup> See 'Scales to Be Placed in Every Market (original title: 市場秤物機將設立矣)', *Nanyang Siangpau*, 10 April 1924, p. 16; 'Pasar Punya Daching', *Kabar Slalu*, 14 April 1924, p. 14.

<sup>58</sup> '[1940] Controlling Chinese dachings in Negeri Sembilan' (AN: 1957/0711847).

<sup>59</sup> '[1949] Weighing scales in Penang' (AN: 1957/0475302); '[1949–1959] Weighing scales—weights and measures enactment' (AN: 1957/0297738).



## Politics of standardization and advocacy of the metric system

Standardizing weights and measures across national as well as internal borders was another issue that gripped the colonial administrators, while their counterparts in Europe were debating similar issues. There were two different but related dimensions of standardization. The first dimension was about *how* to standardize. The second pertained to *which* standard or system to adopt: the British imperial system or the French metric system. The adoption of the metric system, a decimal system of measuring advocated by scientists that originated in France following the 1789 revolution, resulted in resistance in its place of origin and elsewhere, since it was viewed at once a technology of economic coordination by its advocates as well as a revolt against customary practice by others.<sup>60</sup> Not until the late nineteenth and early twentieth centuries was it more widely accepted throughout Europe. But in 1907, a bill to replace existing weights and measures with the metric system, which was meant for global integration, was rejected by the British parliament, making it the only country in Europe in which the metric system was optional. The failure to push for the metric system and global metrological integration in the imperial centre, however, did not deter similar efforts in the colonies.<sup>61</sup> In colonial India, British administrators had initiated metrological reform in the form of unifying different customary measurement units as an instrument of governance since the mid-nineteenth century. The idea of organizing Indian weights and measures on the international metric system was first proposed by W. H. Bayley of the Madras civil service in 1857, but there was no strong advocacy until the 1930s, when Indian nationalists and scientists conceptualized it as a technology of industrial and economic advancement. Nonetheless, gradual conversion to the metric system only started in post-independence India in 1956.<sup>62</sup> Unlike their counterparts in colonial India, local actors played a relatively little role in similar reforms, which were largely taken up by colonial administrators in colonial Malaya. Perak pioneered the issue of federalizing or standardization, when Henry Robilliard, Inspector of Weights and Measures, suggested federating standard weights across the

<sup>60</sup> Nicholson, *Men and Measures*.

<sup>61</sup> 'Untitled', *The Straits Times*, 1 April 1907, p. 6; John Hill Twigg, *Summary of British Official Reports on the Metric System* (London: 1911).

<sup>62</sup> Aashish Velkar, 'Rethinking Metrology, Nationalism and Development in India, 1833–1956', *Past and Present*, 239(1), May 2018, pp. 143–179.

FMS based on Perak's model in 1909.<sup>63</sup> The reform was as much a standardization movement as it was an interstate competition within the FMS. The issue, however, was dropped for a few years until it was picked up again by W. L. Conlay, Deputy Commissioner of the FMS and Chief Police Officer of Perak, in 1915.<sup>64</sup> Conlay's proposal was that only one set of standard weights was to be used for the entire FMS (and preferably for the SS too), against which all other subsidiary weights were to be compared each year.

Despite the discussion on standardization, no amendment was made until 1921. Two major changes have taken place since then. First, the Director of Museum Department was made Custodian of Weights and Measures for the entire FMS and the department was where standard weights and measures were stored. Previously, each district kept one set of standard weights. Custodianship was later transferred to the Survey Department in 1926.<sup>65</sup> Second, the optional use of the metric system was legalized.<sup>66</sup> Whether in Britain, India, or Malaya, the metric system was then highly recommended by some commercial and mercantile groups who had a stake in facilitating global international trade.<sup>67</sup> However, weights and measures, like many other social practices, was a field that people related to in terms of their values, tastes, and emotions. The metric system was received with cheer and contempt. While the rich progressives embraced it, the traditionalists took it as a threat to their customary practices and national pride. The resistance against the adoption of a metric system was also informed by Franco-British competition. A total conversion to the metric system was perceived as an attack on national pride. Allowing optional use of the metric system while at the same time keeping the customary ones was a practical and strategic way to reconcile contradictory expectations. It was not until 1972 that the metric system was fully implemented in Malaysia. Despite all these changes, the catty (or 斤, pronounced 'jin',

<sup>63</sup> '[1909] Adoption of a universal pattern of daching throughout the FMS' (AN: 1957/0147225).

<sup>64</sup> '[1915] Federating the law relating to weights and measures' (AN: 1957/0185249); '[1915] Law regarding weights and measures' (AN: 1957/0185005).

<sup>65</sup> '[1925] Transfer of the carrying out of the provisions of the Weights and Measures Enactment from Museum to Survey Department' (AN: 1957/0239071).

<sup>66</sup> '[1921] Enactment to provide for the use of uniform weights and measures throughout the FMS' (AN: 1957/0216293); '[1921:] Amendments to the draft Weights and Measures Bill' (AN: 1957/0447692).

<sup>67</sup> 'The metric system', *The Singapore Free Press and Mercantile Advertiser*, 19 May 1898, p. 6; 'Decimal Coinage', *The Straits Times*, 29 September 1916, p. 3.

equivalent to 600 grammes) and *tahil* (or 兩, pronounced ‘liang’, equivalent to 1/16 of a catty) are still in use in everyday conversations and market transactions today—an indication that pre-metric practices are still alive in the memory of many Malaysians. Their continued usage tells about the un-governability of customary practices.

### Conclusion

As framed at the outset, metrological reform can be an entry point to deepen our understanding of colonial Malaya. Implemented at a historical juncture when the colonial government was consolidating its grip on Chinese-dominated commercial activities and many other aspects of Malaya, weights-and-measures regulations were a new tool of governance meant to ease taxation, curb the use of erroneous scales, and integrate the system with that used in the imperial centre. The reform was simultaneously welcomed and resisted. While certain segments of Chinese society were taking advantage of the reforms, such as rich towkays who made use of the Fairbanks platform scales to improve efficiency in the tin trade and the licensed *daching* dealers who profited from the *daching* trade, many small traders felt oppressed. The 1897 *daching* riot together with the pre-riot rumours constituted a loud message from small traders and some segments of the Chinese community to the government that certain parts of the reform were unjust and not welcomed. Even though the veracity of the rumour cannot be determined, the message itself reveals the views of the rioters. The riot was a manifestation of a highly heterogeneous colonial society, which was divided along ethnic, class, dialect, and trade lines. On the surface, the riot seems to be a result of tension between colonial administrators who set rules and their Asian subjects who were restricted or inconvenienced. But the involvement of Chinese merchants in the *daching* trade suggests a different layer of social relation: that certain Chinese benefited from colonial governance at the expense of others. Therefore, differences existed not only between European colonizers and their colonized subjects, but also among the latter, who had been differentially affected by the same reform.

In the twentieth century, weights-and-measures regulations remained contested. The debates over the pros and cons of different types of scales were often racially inflected and ideologically charged. Despite the fact that ‘modern’ and ‘accurate’ British spring scales were more prone to inaccuracy than steelyards, Chinese *daching* were taken as

‘anachronisms’ and ‘inaccurate’. The illegibility of the Chinese language was brought up to discredit *daching*, which indicates that metrological reform was also an arena in which language and identity politics played out. In the second quarter of the century, the central concern of the colonial regulation of weights and measures moved from easing taxation, taming traders, and facilitating trade expansion to protecting consumers. Thus, the measures to ensure correct weight changed from raiding and criminalizing the use of fraudulent *daching* to educating the public on how to be more *daching* literate. Placing spring scales at the entrances or exits of a market to allow consumers to check the weight of their merchandise was an innovative consumer-centred approach. The feasibility was, however, compromised due to inadequate funds. In terms of standardization, while the metric system was important for global trade integration and expansion, the colonial government had strategically chosen to allow the optional use of the metric system, instead of fully replacing the customary ones. Thus, old or native customs were maintained, while facilitating international conversion.

Even though this study has as a focus metrological reform in British Malaya, this article not only sheds new light on the understanding of colonial society in Malaya, but also contributes to the wider conversation about historical metrology, which has been largely Eurocentric. Last but not least, as far as the empirical materials of this research are concerned, there are some indications that interstate competition influenced regulation and interstate personal networks were a factor in the *daching* trade, yet the materials are yet to give a comprehensive picture. How did the competition between colonial administrators of different states within the FMS shape the regulation in each state? How did policy ideas flow between and within the SS, FMS, and the Unfederated Malay States?<sup>68</sup> How did interstate merchant networks form the *daching* trade? These are themes that call for further study.

<sup>68</sup> A collective name that refers to five of the Malay states—Perlis, Kedah, Kelantan, Terengganu, and Johor—which had become British protectorates by the early twentieth century.