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## **12. ‘Intelligent Employers of Labour’<sup>1</sup>: Oral Health in the British Factory, 1890-1930**

**Claire L. Jones**

### **Introduction**

In the current business world, the oral health of a company’s workforce can have a significant impact on productivity. By the late 1980s, twelve million work days were reportedly lost to dental causes in Britain (Feaver 1988: 41). In Canada in 2013, over 40 million hours per year were reportedly lost due to dental problems and treatment, corresponding to productivity losses of over 1 billion dollars (Hayes, Azarpazhooh, Dempster, Ravaghi, Quiñonez: 1). It is therefore in the interests of both employers and employees that companies provide some form of dental health welfare and indeed, many large companies do so under private medical insurance. But the inclusion of dental health in the occupational welfare provided by British businesses is a relatively recent phenomenon, as is the idea that good oral health is vital to maintain company productivity. Britain’s large industrial cotton manufacturers were among the first employers to provide medical care for their workers from the late eighteenth century making them the first industrial paternalists. Yet, it was only from the late nineteenth century that large manufacturers began to recognise the mouth as important bodily organ separate from the rest of the body and began to provide their factory workers with oral health care. These manufacturers, alongside the state and the dental profession, began to become concerned that poor oral health was one of the leading reasons for absence from work, increased number of sick days and was responsible for decreasing productivity. Indeed, tooth decay was so widespread in the late nineteenth century workplace and beyond that it was labelled ‘the people’s disease’ (for example, Terman 1913, 11). Accordingly, manufacturers across different industries increasingly employed dentists to inspect workers’ mouths, promote oral hygiene and provide dental treatment. And yet, despite its importance, historians have largely overlooked the

development of oral health care as a part of occupational health and industrial welfarism and the growing literature on the history of occupational health only briefly mentions oral health (Bartrip 2002; Harrison 1996; Long 2011; Long and Marland 2009; Russell 1991; Weindling 1985).

Until recently, histories of industrial dental welfare tended to be subsumed into more narrowly defined histories of the dental profession, often written by dental professionals themselves. In aligning industrial dentistry with professional, medical and technological developments within dentistry, these histories generally provide a teleology; they suggest that industrial dentistry was adopted by enlightened practitioners and ‘intelligent employers of labour’ for the wholesale good of workers, the nation and its citizens and a development that filled the gap in universal dental provision until the foundation of the National Health Service in 1948 (Gelbier 1991; Feaver 1988). Given the type of evidence such histories draw upon, this perspective is unsurprising. Company reports and records, professional journals and correspondence all indicate an enlightened vision of saving the teeth of Britain’s workforce. By not focussing solely on the positive testimonies of employers and dentists, we learn that dental welfarism had a much wider and multi-sided set of significances. In analysing late nineteenth and early twentieth century industrial dental welfarism in its broader context of public and occupational health, this chapter demonstrates how its introduction was squarely in the interests of dental practitioners and factory bosses. Indeed, its introduction was far from inevitable and was not solely a response to a perceived need by the enlightened. As we will see, regardless of any benefit to individual workers, industrial dental welfare was not only a tool used to enhance company productivity but also aimed to make the workforce politically compliant, thus mirroring concomitant state attempts to survey and regulate the public’s health. Much of this oral health provision then centred on power relations and represented employer attempts to

control the industrial worker's mouth. Drawing on Foucault's concepts of governmentality and biopower, historians and sociologists have long discussed power relations of this kind as forming a central part of public health with its emphasis on prevention (Armstrong 1983; Lupton 1995). Moreover, as sociologists have long argued, the mouth, as the boundary between the internal and external bodies, is a body part that is uniquely placed to become regulated and controlled (Nettleton 1992). As employers, dentists and the state began to argue, the industrial worker's mouth was the gateway to the rest of the body and a barometer of general bodily health; its control had far reaching implications for not only the overall health of the population but of the body politic. However, as we will also see, such control was not always achieved. The processes of control were messier than has typically been acknowledged and some employees resisted attempts at control of their mouths. Employee opinion is, of course, notoriously difficult to uncover; the records of such are rarely extant. Nonetheless, some insight into worker reception of dental welfare provision will be gleaned through neglected sources, some of which demonstrate that employees rejected dental welfarism at worst and were apathetic about it at best.<sup>2</sup> In order to facilitate a comparative analysis, this chapter will chronologically outline the development of dental welfare by drawing on prominent early examples within three different British industries - match making, confectionary and biscuit making.

### **Phossy Jaw in the Match Factory, c. 1890-1912**

As various Acts of legislation began to place oral health and hygiene increasingly under state and medical control in the late nineteenth century, the question of oral health in the factory first came to prominence in Britain's twenty-five match factories. Under the Public Health Act of 1875 and the Factory and Workshops Acts (1878, 1883, 1891, 1895), medical officers of health and sanitary and factory inspectors put the oral health of the 4,300 match factory workers under

surveillance, prompted by the presence of phosphorous necrosis (or ‘phossy jaw’ as it became commonly known). Since the 1830s, match making had involved dipping wooden splints into white or yellow phosphorous; the chemical reaction it fostered when matches were struck produced the yellow flame, but phosphorous was also highly poisonous. Workers, particularly those who dipped matches over sustained periods of time in poorly ventilated work rooms, suffered from painful inflammation, putrid abscesses on the face, mouth and gums and disintegration of the jaw; some died as a result. Treatment involved tooth and bone extraction. Poor oral health was widespread in the match factories; workers were described as being ‘of the poorest and most down-trodden appearance’ and dental caries in particular were thought to predispose individuals to the condition (Squire 1927: 55). Much state, medical and employer emphasis then rested on preventing caries through mouth surveillance and the promotion of self-regulation of the mouth through oral hygiene.

While the reported number of cases each year remained relatively low (estimated at about 1 per cent of the workforce), by the 1890s phossy jaw’s identification as an industrial disease with horrific symptoms made it a powerful weapon in the political struggles around working conditions, welfare and state regulation (Harrison 1996: 68). The match factory worker’s mouth was at the centre of these struggles. Public and state attention mostly focused on Bryant and May, Britain’s largest match maker with its factory in London’s East End. The company’s poor reputation as an employer with non-existent welfare provision had been highlighted by the infamous Match Girl Strike of 1888, during which women employees walked out of its factory in protest at low wages and the firm’s system of fines.<sup>3</sup> Sensational stories of phossy jaw at the factory in the local and national press further blemished the company’s reputation. The *Star*, in particular, not only revealed the firm’s poor working conditions but also exposed its cover-up and underreporting of cases, resulting in a widespread feeling of injustice that the

firm's owners were profiting from the sweated labour of their workers (Emsley 2000: 106). Bryant and May had also threatened employees with non-payment if they dared to report phossy jaw cases (Harrison 1996: 68). The Salvation Army were so concerned about conditions in British match making that it established its own factory in 1891 to produce 'safety' matches made from the non-poisonous red phosphorous, although the continued popularity of 'strike anywhere' matches with white or yellow phosphorous meant that the venture was commercially unsuccessful and was taken over by Bryant and May in 1901. New legislation in 1892 and 1896 required match factories to provide adequate ventilation, washing facilities and report cases of phossy jaw to the factory inspectorate, although the cover-up of cases continued (Satre 1982). At its own expense, Bryant and May employed a dentist, C. Laurence Gill, to regularly examine and treat workers' teeth. By the end of 1898, over 450 of the firm's 1,300 workforce had been inspected and 104 received dental treatment and were subsequently certified as having sound mouths (Thorpe, Oliver and Cunningham 1899: 86).

Similarly, The Diamond Match Company, Bryant and May's biggest rival and Britain's second largest match producer, feared the adverse publicity from phossy jaw and stated that it was 'so great a source of continuous anxiety that the directors resolved that they must definitely and absolutely prevent the disease or give up the industry' (Thorpe, Oliver and Cunningham 1899: 145). As an American company, it drew on oral health measures already established in the United States. Westerton, the Company's dentist, examined and treated the mouths of factory workers, while the Company required workers to have the appropriate dental work carried out at their own expense. The firm paid the worker's wages for the period of time they were incapacitated from dental treatment and provided artificial teeth where necessary. The Company also urged its employees to thoroughly cleanse the mouth, teeth and gums after meals, using a tooth brush with borax and Castile soap-powder every morning and evening in

their homes. Tooth brushes and tooth powder were supplied free (Thorpe, Oliver and Cunningham 1899: 17).

By the time the Home Office began its inquiry into the use of phosphorous and its health impact on the match making workforce in 1898, both the Diamond Match Company and Bryant and May could demonstrate their provision of dental welfare. With input from leading dental public health advocate George Cunningham, the 1899 Report from the inquiry highlighted the excellent facilities ‘voluntarily’ introduced by the firms and called the companies pioneers (Thorpe, Oliver and Cunningham 1899: 18, 86). The Report also offered fourteen recommendations to Britain’s other 23 match factories, including the employment of a resident dentist, the employment of workers with sound teeth, the installation of hot and cold-water basins and soap, and a regime of systematic gargling with an antiseptic mouthwash, as well as introducing measures to ensure worker compliance, such as erecting instructive notices around the factory. Many of these recommendations were turned into rules in revised Factory Acts.

But while dental welfare became common to British match factories by the turn of the twentieth century, it did not transform the industry nor the overall oral health of the workforce and thus, was not a successful exercise in worker coercion. Other smaller firms remained unconvinced that the financial outlay for dental welfare was not economically beneficial and were unhappy with the state meddling in their private affairs; they resented the factory dentist and saw him, his office and equipment as a financial burden and suffered reduced earnings from the reduction in working hours when individuals were being examined and treated, and thus only provided the bare minimum required by law (*Daily News* 1899). Similarly, not all dentists were convinced of the benefits of promoting oral hygiene in the factory; dentists often saw workers as the impediment to their own good oral health. Westerton at The Diamond Match Company

stated that giving toothbrushes to workers had proven to be no good whatsoever because the teeth of these workers from the working-class districts of Liverpool were in such a bad state to begin with (Thorpe, Oliver and Cunningham 1899: 148). Gill estimated that only 5 per cent of the Bryant and May factory had sound teeth, reflective of the poor oral health of the population of the East End more widely. Cunningham stated that ‘to my mind, the only matter for wonder is not that they [match factory workers] suffer from necrosis, but that so many of them escape’ (Thorpe, Oliver and Cunningham 1899: 208). Older women employees were particularly susceptible to poor oral health, partly because they were less likely than men and younger workers to admit to it for fear of having all of their teeth removed (Thorpe, Oliver and Cunningham 1899: 86).

Moreover, there is little evidence to suggest that individual workers appreciated the introduction of dental welfare. Visits to factory dentists, while high in number, were compulsory and do little to highlight worker enthusiasm. The 1899 *Report* recognised that compulsory dentistry ‘was not likely to be welcome by all the persons employed’ and found that the majority of the hundred strong workforce at Albright & Wilson’s phosphorous factory in Oldbury, Birmingham objected to oral examinations and refused to clean their teeth (as well as their hands), resulting in the company’s abandonment of compulsory preventive measures (134). Women workers at Bryant and May would not ‘submit to the extraction of their teeth’ and potential female employees were deterred from applying for available factory positions as word spread through the East End of the factory’s introduction of a compulsory dental examination on admittance, making it difficult for the firm to have a full workforce (Thorpe, Oliver and Cunningham 1899: 86, 182). Some Bryant and May workers suffered from phossy jaw after having teeth removed by practitioners outside the factory before returning to work, which went against company rules to not return to work after tooth extraction until the wound



had healed, given the increased susceptibility to necrosis. Periodic dental inspection also prompted some Glasgow factory workers to take strike action, the very action firms wished to avoid (Bartrip 2002: 211).

Bryant and May and The Diamond Match Company amalgamated in 1901. In the subsequent decades, the enlarged firm obtained a reputation as a prominent welfarist employer and argued that its provision of dental welfare, alongside other forms of welfare, had helped to increase productivity and workers' use of freely distributed toothbrushes and toothpaste had led to a reduction in sickness days (Marshall 1912: 6). But its introduction of dental welfare was not as a result of its benevolent intentions; it was the adverse publicity of having an employee suffer or die from phossy jaw and the threat of further industrial unrest that had prompted it and thus represented a method of worker coercion (Fitzgerald 1989: 52). Demonstrating the limitations of dental welfare in the match making industry, oral hygiene practices were actively resisted by some workers. It was the decline in the commercial popularity of the 'strike-anywhere' match, the state's prohibition of white phosphorous from 1910, as well as growing automation in production, that had a larger impact on the decline of phossy jaw and overall improvement in the oral health of match factory workers.

### **Enhancing Worker Efficiency and the Benevolent Paternalism of Confectioners, c. 1904-1925**

As the phossy jaw scandal was on the wane, a number of large confectioners employing thousands of workers established dental clinics and associated oral hygiene programmes for their employees. While Rowntree and Company Ltd of York established its clinic in 1904, the clinic established by Cadbury's of Birmingham in 1905 was the most comprehensive and became a model clinic for other firms. Company dentists W. Courtney Lyne and from 1908, T.

P. Wolston Watt subjected the firm's 5,000 employees to a systematic programme of teeth and mouth examination and treatment (if necessary), which soon became compulsory and a condition of employment (Gelbier 1999: 15). To encourage workers' self-regulation of the mouth, the dentists displayed 'Care of the teeth' charts in lavatories and other prominent places around the manufactory, provided toothbrushes and toothpaste at a discounted rate and wrote regular articles and reports on oral hygiene within the bi-monthly *Bournville Works Magazine*. By 1910, Watt claimed that nearly 9,000 teeth had been removed and over 3,000 were filled (311).

[insert figure 1 here]

What prompted the confectioners to provide dental welfare for their employees? Like those of match factory workers, the teeth and oral hygiene habits of confectionary factory workers were generally poor, possibly due to the decaying effect of the high level of sugar dust in the air. And yet, the teeth of confectionary workers were reportedly no worse than workers in other industries or in the wider community (Lyne 1907). Moreover, unlike match making, confectionary was not a dangerous trade and the industry did not have phossy jaw to contend with; neither did legislation coerce their adoption of such measures. Instead, dental welfare formed part of confectioners' expanding welfare programmes, which included medical care, pensions, sick pay, education, recreational facilities and perhaps most famously, accommodation in the form of model villages at Cadbury's Bournville and Rowntree's New Earswick. Aided by the firms' marketing, the public at the time and historians subsequently accepted that confectioners were motivated by the benevolent paternalism of their Quaker faith (Kennedy 2000; Wagner 1987). Yet, while confectioners were benevolent, they were also convinced that workers would be more productive if they had good oral health. Watt,

Cadbury's dentist, claimed that no one could work 'satisfactorily with raging toothache' and as an advocate of the theory of focal sepsis, argued that tackling oral sepsis prevented other forms of illness among the workforce (Watt 1910). Cadbury's doctor confirmed that he had witnessed an improvement in digestive troubles among workers after combatting tooth decay because poisonous micro-organisms from the mouth had been prevented from affecting the stomach; he stated the effect on morale was positive because the worker felt that the employer was doing something for their benefit and thus productivity increased. Similarly, the doctor at Rowntree's was so convinced of the benefits of tackling poor oral health that he implored the firm: 'If you can't afford to employ both a dentist and a doctor, I advise you to get rid of me and provide a dentist for so much of the illness is due to faulty teeth that I really think his services are more necessary than mine' (Feaver 1988: 41). The doctor nonetheless remained employed alongside the dentist.

Enhancing worker efficiency at the factories of the confectioners was also intertwined with the state's new quest for national efficiency through greater intervention in the health of its citizens. Prompted in part by the poor oral health of army recruits for the Boer War (1899-1902), the Liberal Government introduced a state-led programme of national regeneration through the introduction of wide-ranging welfare legislation from 1906. Dental care was rarely included under the National Insurance Act of 1911 and thus, confectioners' industrial dental clinics aimed to provide workers and sometimes their dependents with the dental care they believed they needed (Gelbier 1999: 1). State and employer welfare provision was also an attempt at worker appeasement by limiting the appeal of more radical left-wing solutions to social problems which, according to Kevin Dowd, was largely successful (2001). Unlike at Bryant and May several decades earlier where the match making workforce were heavily unionised, welfare provision in the confectionery factory had the effect of advancing the cause of political

moderation (and Liberalism in particular) and encouraged a belief in an economic structure that industrial society operated for the mutual, almost equal, benefit of employers and employees. Indeed, it was no coincidence that both the Cadburys and the Rowntrees were heavily involved in local and national politics. While B. Seebohm Rowntree's 1901 *Poverty: A Study of Town Life*, based on his investigation into poverty in York, inspired some of the Government's reforms around unemployment and education, George Cadbury refused several times the offer of becoming a Liberal MP and instead promoted the cause of 'New Liberalism' to the working classes through his ownership of the *Daily Star* newspaper (Dowd 2001: 59).

The key to both Cadbury's and the state's aims of regeneration and worker compliance was the child.<sup>4</sup> While the state emphasised the importance of child-rearing and education, workers under 16 years old were a main target of Cadbury's oral health programme. Edward Cadbury laid out the firm's scheme in his 1912 publication, *Experiments in Industrial Organisation*. He argued that treating child worker's teeth formed 'the basis of the whole dental organisation in the Works' and outlined that as a condition of employment, parents were required to authorise the dentist 'to do whatever he considered necessary for the benefit of the boys' and girls' teeth' and their treatment would be continuous until boys were 21 and indefinitely for girls (104). Each child worker was given a tooth brush and a tin of tooth powder, together with a leaflet on 'The Care of the Teeth', which the dentists ensured were properly used. On admission to the Works, each child worker was further introduced to the importance of oral hygiene for preventing tooth decay through a series of lectures on the structure and care of the teeth, which were illustrated by black board, drawings or lantern slides. Watt described such lectures as 'useful propaganda'.

Cadbury's oral hygiene promotion to children also expanded into local schools, which, as Nettleton has argued, were ideal observatories for routine dental surveillance and the exercise of dental power (1992: 32). The firm donated a toothbrush and a tin of tooth powder to every child at the four elementary schools from which the majority of its employees came. In 1910, 97 per cent of these children were reportedly suffering from carious teeth (Watt 1910). In turn, school teachers, who 'heartily co-operate', used these gifts in regular 'toothbrush drills' and requested more from the firm when required (Cadbury 1912: 105). The promotion of oral hygiene expanded further into Birmingham's School Medical Service, established in 1907 as another Liberal Government reform. Elizabeth Taylor Cadbury (1858-1951), wife of George Cadbury, was integral to championing the health of the local child stating in 1907 that 'almost all the problems of physical, mental and moral degeneracy originate with the child'. Cadbury took a special interest in child oral health by establishing and running Birmingham's school dental treatment scheme between 1911 and 1924. H. V. Smith suggests that Cadbury's particular interest in improving the dental health of school children was based on her own childhood experience of dental problems, as well as those of her children. During her adolescence and again in adulthood, Cadbury suffered from severe dental problems, requiring an emergency extraction and a protracted series of dental surgeon visits. She also faced difficulties locating reliable dental practitioners to provide treatment for her children (2012: 170). By 1914, the scheme had provided dental treatment for over 10,600 children in Birmingham elementary schools (Smith 2012: 195). The dentists at the Cadbury's works watched the City's programme closely and by 1921, Watt suggested that the fact that the number of child workers within the firm that required treatment had decreased over the past few decades was proof of its efficacy (Watt 1921: 218). The firm's influence in dental matters in the city continued with the establishment of Bournville Dental Hospital in 1925, which was

funded by company management, Quaker donations, run by the factory dentists and aimed to attend to the oral health of employees and their dependents (Reinarz 2009: 142-3).

By the 1920s, the Bourneville Dental Clinic was hailed as a great success by Cadbury management and the firm's dentists. It became a model for the British Dental Association on how employers could promote worker efficiency through an industrial dental clinic and was also an inspiration to manufacturers in other industries (British Dental Journal 1922; *Bourneville Works Magazine* 1920). In 1921, Watt claimed that the 2,000 patients attending the Cadbury's clinic per year for toothache were back to work within an hour and by the 1930s, claimed that the clinic's programme contributed to the workforce's adoption of regular teeth cleaning (218; 1937: 52-3). The firm could claim the success of its oral health programme because it was compulsory. Dental surveillance over the workforce, and beyond into the local community, was therefore largely achieved. But while company records provide a wholly positive view of worker reception to company dental provision, some workers did resist such intervention. Watt confirmed that many employees, particularly young girls, initially avoided the Clinic because rumours of the pain inflicted on patients circulated the manufactory. Moreover, many of the male workers that claimed to brush their teeth by the end of 1905 only did so 'about once a month and that day was usually Sunday' (Cadbury 1912: 109). Company records thus are not necessarily revealing of the extent to which oral hygiene was adopted by workers. Nonetheless, workers seemed to accept interventions into their oral health, as well as other aspects of their life, more readily than those in Britain's match factories several decades earlier. Cadbury's dentist was keen to emphasise that 1,500 workers visited the Clinic of their own accord by 1910 (Watt 1910). In addition, its provision of welfare meant that the firm seemed to succeed in mitigating against labour unrest. The confectioners' motivation for establishing a dental

welfare programme then may have been benevolent but should not be detached from the wider state aims of enhancing national efficiency.

### **Industrial Welfare Professionalised, Socialism and the Biscuit Maker, c. 1918-1930**

The dental clinic of Peek Frean, the biscuit manufactory based in Bermondsey, London, that employed 2,000 workers, had much in common with those of the confectioners. It was established in the first decade of the twentieth century in order to provide oral examination, treatment and programmes of prevention to the firm's workers and their dependents. It was also founded with the explicit aim of enhancing worker health and happiness and thus company efficiency and despite workers going on strike in 1911, management were convinced of its success (De La Mare 2008). A. S. Cole, the firm's manager responsible for dental and medical welfare, stated that 'health is largely dependent on the prevention of the ailments which have as their origin defects of the teeth'. Similarly, the child was a key focus of Peek Frean's clinic and its work (Gelbier 1999: 16-7). Cole attributed a growing interest among the young workers in the health of their teeth to the work of the school dentist before they entered employment; thus, the clinic of the Peek Frean factory functioned as an extension of the dental power of schools. Yet, while the clinics of the confectioners continued to play an important role in interwar politics and industrial relations, it was the clinic of Peek Frean that had a noticeable impact both in the professionalisation of industrial welfare nationally and in the transformation of local public health during the period of reconstruction after the First World War. Peek Frean contributed to these shifts in two key ways.

First, as vice-president of the Institute of Industrial Welfare Workers Incorporated (IIWWI) during the 1920s, Cole played a key role in the professionalisation of industrial welfare and in the extension of dental health surveillance in the factory (Peek Frean book 5 1925).

[insert figure 2]

The interwar period witnessed a flourishing of institutes, societies and publications promoting industrial welfare as employers both sought to pool together methods to improve working conditions after the devastation of the war and to assert their authority in order to prevent labour disputes. Trade union membership, which had stood at 2.5 million in 1910, spiralled to 6.5 million in 1918 and had reached 8.5 million by 1920. Moreover, factories were now too large for employers to know all of their workers so paternalism was difficult; many firms attempted to create and maintain a 'family spirit' through welfare. The IIWWI was small in comparison to the Industrial Welfare Society, the first national body concerned with workers' welfare under the directorship of Seebohm Rowntree and with over 700 members representing firms from all sectors of industry, but its scope was different. The Institute represented the supervisors responsible for managing company welfare, rather than being representative of the larger company as was the case with the Society (Woollacott 1994: 45). Cole could therefore practically demonstrate to other members of the Institute and its local branches how the Peek Frean dental clinic produced firm efficiencies and resulted in worker compliance. Simultaneously, industrial dentistry was finding a home at the British Dental Association (BDA). Through the Association's Committee on Industrial Dental Service, the increasing number of factory dentists were keen to demonstrate the value of industrial dentistry to employers that felt financially constrained and did so through the publication of a report in 1922 (BDJ 1922a). Robert Lindsay, Dental Secretary of the BDA, argued that employers that did adopt such schemes 'got their reward in the better dental health of their work people, which resulted in more regular attendance and better work', while claiming that employers who failed to adopt such services were failing the nation: 'unless they do wake up to it, we, as a nation,



shall find ourselves worse handicapped than ever in the race for industrial supremacy' (Gelbier 1999: 28).

At a national level then, industrial dentistry was extending its gaze through professionalisation but at a local level, Peek Frean's dental schemes formed part of a broader public health campaign in Bermondsey. The campaign, the first of its kind conducted by a Sanitary Authority aimed at instilling personal hygiene habits into the local population of 120,000 people who lived and worked for low pay in the Borough's various local factories, formed part of a political struggle between the local Labour Borough Council and the Tory government for the provision of universal health services (Lebas 1995: 43). Under the reforming influence of Dr Alfred Salter (1873-1945), Bermondsey Labour councillor, MP and Christian socialist, and his wife Ada, the first woman Labour Mayor in Britain, Dr R. King Brown, local medical officer of health, and Grantley Smith, municipal dental surgeon, were the driving forces behind the campaign. Brown and Smith argued that 'bad teeth' (caries and pyorrhea) was the most common source of 'malignant germs' among the local population and the cause of many cases of ill health (Report 1924: 37-8). Although Peek Frean was an important local employer, the majority of the population of Bermondsey were not eligible for the firm's dental welfare. Thus, in the absence of national provision for oral health, Smith argued that the only way to tackle the widespread problem of poor oral health was to combine industrial and public health efforts, thus strengthening the dental gaze across the public and private spheres.

The campaign consisted of programmes of lectures, advertisements and films on care of the teeth. Between 1923 and 1948 the Council's Public Health Department made approximately thirty films, which included footage of workers of the Peek Freans factory. An electric sign, illuminated at night and working from 7am until 11pm, showing twelve pictures of 'the evil

effects following neglect of the teeth' was erected near to the Borough's dental clinic, which aimed to fill a gap in dental provision by treating those not provided for by Peek Freaan (*Southwark and Bermondsey Recorder* 1922; *Daily Telegraph* 1924; *Report* 1924: 37). A second Borough dental clinic opened in 1927. Three open-air demonstrations on the teeth, delivered by Smith and held at different places in the Borough, addressed between seven and eight hundred people (*Report* 1924: 39). By 1928, Brown circulated magazines to residents of the borough with information on the dental clinics (*Report* 1928: 61). By 1930, the Borough opened a Health Centre, one of the first in London to combine a dental clinic, with a tuberculosis solarium, a foot clinic, and ante-natal and child-welfare clinics (Jones 2011).

[insert figure 3]

The campaign was considered a success by campaigners. Brown claimed that the interest of the seven or eight hundred people who attended the lectures was 'unquestionable', while the publication of the magazine was reportedly due to demand for more information and the success of the illuminated signs inspired other boroughs to erect similar (*Report* 1924: 39; 1928: 61). The campaign grew throughout the interwar period and as explained in a text book co-written by Donald Connan, Brown's successor, it became a model to other health authorities and used to extend local authority public health provision until universal provision under the National Health Service in 1948 (Connan and Bush 1927). But of course, it was in practitioners' professional interest to highlight the campaign's success. While the local authority apparently enjoyed consistent grassroots support, there is little evidence from the population of Bermondsey that they embraced the campaign's messages about how to care for their own teeth, let alone enjoyed improved oral health. Indeed, Brown even suggested that most local people still failed to visit the local clinics and Smith stated that many were suspicious and even

openly hostile towards well-meaning oral health advice. Moreover, with poor housing conditions, Salter argued that ‘it was utterly impossible for them to maintain bodily cleanliness’ (Brockway 1951: 12. See also Ward 2019). The campaign therefore was more of an imposition on the local population and like the provision of dental welfare by the match factories and confectioners, was not something they demanded or necessarily valued. The Bermondsey public health campaign and Peek Frean’s part in it nonetheless demonstrates how company dental welfare formed part of state surveillance into the mouths of local workers and vice versa with the aim of nurturing healthy and productive workers and citizens in an increasingly socialist metropolis. Both local authority and company dental welfare expanded as the Labour party took increasing control over London boroughs in the interwar period and London County Council by 1934.

## **Conclusion**

Oral health is a much-maligned topic in the wider historical scholarship of occupational and public health. Yet, as this chapter has demonstrated, it formed an important focus of the welfare provided by employers in at least three manufacturing industries in late nineteenth and early twentieth century Britain. The provision of industrial dentistry took similar forms in match making, confectionary and biscuit making: dental surveillance by professionals and the promotion of self-regulation of the mouth through oral hygiene. And while each industry was prompted into providing this welfare for different reasons, it is clear that it provided a way to regulate the industrial worker’s mouth and by extension, the wider population. Through this regulation, employers aimed to improve productivity, but also to create a compliant workforce, which was enhanced by the professionalisation of industrial welfare and industrial dentistry. Regulation was most obviously aimed at the child. Both the confectioners and Peek Frean saw the key to improving workers’ oral health was to instil oral hygiene practices into children both

before and after employment not only to prevent dental caries but also to produce a compliant workforce. Such measures were a key feature beyond the factory too, as the state attempted to regenerate the population in the form of measures, such as the School Medical Service at the national level and public health campaigns of the Labour party at the local level. However, the extent to which these firms succeeded in regulating the mouths of their workers is more mixed. While making visits to the company dentist compulsory for workers ensured oral health surveillance some degree of success, oral hygiene practices were rejected by some workers, particularly those who had not already been exposed to such practices by school dentists. Indeed, toothbrushing did not become a common practice among workers, as among the British population more broadly, until at least the 1940s and became so for a number of reasons that are beyond the scope of this chapter. Nonetheless, this chapter has demonstrated that the beginnings of dental welfare and the aims of companies like Bryant and May, Cadburys and Peek Frean to control the worker's body cannot be divorced from the wider state frameworks of disciplinary knowledge and power.

Clearly, much more research needs to be conducted on the history of dental welfare by British employers, not only in other factory settings during the period under study here but also beyond and in divergent work places that engaged those other than the industrial worker, such the growing number of white-collar firms and in retail. Indeed, important mid-twentieth century retailers like Marks and Spencer became providers of dental welfare to its middle-class employees before universal NHS provision (Gelbier 1999: 24-5). Industries were also clearly gendered. Moreover, further work needs to be carried out on worker responses to such measures. Yet, without such research, this chapter has suggested that employers played a more central role in the state's overall aim of shaping the health of workers and citizens, thus blurring the boundary between private and public provision. Indeed, it can no longer be taken for

granted that workers wholesale accepted employer (or indeed state) provision of dental welfare, even though it was promoted as being in their best interest.

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<sup>1</sup> S. Gelbier, *Development of Industrial Dental Services in the United Kingdom* (1999), p.

<sup>2</sup> For the provision of other worker facilities, see Hayes (2002).

<sup>3</sup> Labour historians have long regarded the Match Girls Strike as heralding the rise of militant trade unionism. For example, Briggs and Saville (1971); Fitzgerald (1989); Raw (2009).

<sup>4</sup> Historians have long emphasised the state's prioritisation of child health in the early twentieth century. For example, Giswilt-Hofstra and Marland (2003); Steedman (1990).