

From Porcelain to Plastic: Politics and Business in a Relocated False Teeth Company, 1880s–1950s¹

DAVID DE VRIES

Why False Teeth?

“No one writing on the industrial possibilities of Palestine,” wrote Sir John Hope-Simpson in his famous 1930 commission’s report, “could by any logical course of reasoning arrive at the apparently fantastic conclusion that Palestine is a country particularly suited to the manufacture of artificial teeth.”² Hope-Simpson, the British Vice-Chairman of the League of Nations Refugee Settlement Commission in Greece, based his amazement on the curious advance of a single firm industry—the “American Porcelain Tooth Company”—in a country that lacked the relevant raw materials for its dental production. Four years since its arrival from Philadelphia in Tel Aviv in 1926, the factory was producing close to 20,000 teeth a day and exporting most of them to almost dozens of market destinations across the world. As a politician and land settlement expert Hope-Simpson knew well the difficulties expecting an industry in moving across the globe, the systems of power and authority such an industry needed to accommodate, and the variety of local politics to which it had to adapt. Indeed, was the role false teeth making played during the Mandate period a demonstration only of the industrial build-up in which Jews engaged in conflict-ridden Palestine? Or, as will be argued below, did this highly skilled industry involve also some weighty political issues?

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David De Vries is a Professor of History at the Department of Labor Studies, Faculty of Social Sciences, Tel Aviv University. Contact information: Tel Aviv University, Naphtali Building, Ramat Aviv, Tel Aviv 69978, Israel. E-mail: devries@post.tau.ac.il

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2. Hope-Simpson, *Palestine*, 113.

In recent years the histories of prosthetics, physical correction and beauty have become abundant. They have been fed on fascinating mixtures of history of science and consumption, the individual body and business, and the social and ethnic networks with globalization. One implication of these histories was to emphasize the need to understand how industries and corporations change in space, how they experience moving and relocation, and how various agents impacted and were impacted by this space and its shifting boundaries. These emphases resulted in challenges to “methodological nationalism,” and in close examinations of the mechanics of transregional and transnational business networks. Moreover, if globalization happens within national contexts and specific business environments, then politics and its myriad dimensions are essential to business history. Particularly relevant is how varied levels of relations of power, of state regulation, and of imperial preferences intersected to shape the widening or contraction of the industrial geographical spaces in which firms rose and fell.³

In this re-emphasis on the inseparability of technological change and business history from politics four levels are relevant. The first is level of production. It refers to its politics of economic competition, struggle over use of patents and property rights; but also to the struggle over reputation among producers and products, and to the fact that the spatial dispersion of the marketing of products has been dependent on relations between inventors, manufacturers, marketing agents, and even states. The second level is subsumed under local politics. This is where the translation of technological advances into economic advantages and gains was depended on ethnic networks, communal structures, labor relations and municipal politics; but also on the ability to relocate and accommodate circumstances in changing localities. The wider, third level, is state and national politics, composed of customs and duties policies, spatial aspects of state-driven economic nationalism, and from above regulation of competition. The final and systemic level is where imperial and colonial politics shaped the boundaries of the industrial spaces of production, where international tensions have impacted the passage of knowledge, materials, labor power and skills, and where the rise and fall of a firm, and therefore its competitive capacities was determined. As will be demonstrated below these dimensions and levels should not be conceived as hierarchical, each subsumed in another. Rather, they were complexly tied, intersecting, and closely entangled.

The making of false teeth in the nineteenth and twentieth centuries in which the case of the “American Porcelain Tooth Company” is

3. Sassen Territory, 3–7; Jones and Wadhvani, “Entrepreneurial Theory and the History of Globalization.”

situated is an apt prism to examine this argument of interacting levels. Both because in explaining its evolution and change overwhelming weight has been given to dental technology and craft knowledge; and the consequent simplification of the presence of politics. Being part of the histories of dental prosthetics, body correction, oral hygiene, and surgical aesthetics, the itineraries of inventions and production in artificial teeth manufacture, its industrial–geographical dispersion, and its turning into a mass-consumed article have been lumped together under the explanatory umbrella of technological change. Accordingly, it was the technical evolution of the production of complete dentures in the nineteenth and twentieth centuries—from wood and ivory, to rubber and porcelain, and to the lingering supremacy of acrylic resin dentures—that timed the change in the spatial geography of false teeth production and explained the response to socially widening demand for facial correction and oral health.⁴

Furthermore, politics is narrowed down in the particular literature to a distant context. The oft-mentioned sets of dentures in the biographies of political leaders such as George Washington and Winston Churchill were invariably used to indicate the narrow social accessibility to mouth and facial correction. The impact of wars and political extremes were narrowly alluded to usually in connection with the gruesome business, widely prevalent in mid-nineteenth century, of extracting of teeth from fallen soldiers; or, in a different note, as effects of the rise of Fascism in 1930s Europe on the migration of dentists and dental knowledge.⁵

The changing technology and industrial application in false teeth making have, however, been driven by a variety of religious and ethnic groups, individuals, and firms. The latter's inventive and entrepreneurial activity brought them in contact with local and wider political levels, and through their practices they weaved these systems together. This can be clearly seen in the social biographies of the false teeth inventors, laboratories and factories, whose adaptation to technological change, and competition over the consumers of dentures and over reputation among dentists, constructed a seamless web of ties between Europe, the United States, and the Middle East. As the narrative trajectories in the case below demonstrate, in addressing distant systems of power and regulation at the local, national, and imperial levels they created unexpected threads between them, joining contexts that in turn determined their own fate. In this way these individuals and groups in false teeth production tied together

4. Engelmeier, "The History and Development of Posterior Denture Teeth," parts 1 and 2; Gilman, *Making the Body Beautiful*, 49–53, 153–5; Woodforde, *The Strange Story*, 2–7.

5. Darnton, George Washington's False Teeth, 3–24; Woodforde, *The Strange Story*, 98–108.

the rising demand for functional and aesthetic correction of the body on the one hand, and the widening of the social bases of false teeth consumption on the other. In this widening of the industrial and commercial space the presence and impact of the various levels of politics were multifarious and complex.⁶

From Craftsman to Manufacturer

The winding story of the “American Porcelain Tooth Company”⁷ starts with the migration of a craftsman, and it highlights a myriad of economic and political motivations. Its founder, Shmuel Shimon (Samuel Simon) Bloom, was born in 1860 to a Jewish orthodox family in Vilkomir (Ukmerge), a shtetl in Lithuania. The town was at the time economically expanding and by 1891 Jews comprised three-thirds of its population. The town’s location on the commercial roads connecting Warsaw and Sankt Petersburg and Vilna and Libau turned it an important economic entrepôt, and an attractive focus for Jews who dealt in commerce and manufacture, in particular in the brick industry, earthenware, and jewelry. Bloom’s father, a Rabbi, died when Samuel was ten years old. The father’s death impoverished the mother and her five children, and Bloom, who studied the Bible and the Talmud in a Yeshiva, was forced to find work. At the age of 13, he began apprenticeship at his uncle’s jewelry workshop where he acquired the skills that would later serve him in dental production.⁸

Two years later Bloom joined a jeweler workshop at Sankt Petersburg, preparing gold chains. As a Jew lacking a residential permit to reside in this town (unless converted) he had to sell his jewelry roaming about between surrounding towns and villages. He finally ended up in Vilna (Vilnius) where he could save a small fortune.⁹ At the age of 17, Bloom was forcedly conscripted (as many Jewish youngsters were) to the Russian army. The technical skills he acquired working at his uncle’s jewelry workshop won him military service in an engineering division in the Kerch fortress in far way Crimea. Here he spent four excruciating years, experiencing anti-Semitism and social

6. On agency in global production and commerce see Abrevaya Stein, *Plumes*, 6–18, 150–4; Jones, *Beauty Imagined*, 200–33.

7. Short descriptions of the company were sketched in Himadeh, *Economic Organization*, 602, Glass, *From New Zion to Old Zion*, 299–301, and Bloom, *My Memories*. The company’s records have not survived. The sources used here were found in public archives, the contemporary press, and histories of dental prosthetics. On the markets to which the company exported see [table 1](#) in the appendix.

8. Bloom, *My Memories*, 9–40; On Vilkomir and its Jews see Levin, “Ukmerge”; Spector and Wigoder, *The Encyclopedia*, 1358.

9. Bloom, *My Memories*, 41–50.

exclusion which climaxed in the frightening atmosphere of the 1881 pogroms that followed the assassination of the Russian Czar. Bloom's consolation was his work for the Russian officers and cadets and their wives—preparing gold chains and golden buttons for their uniforms. This allowed him to send some money home, and more crucially, to bribe his way out of the army. Shortly after Bloom followed his sister and brother-in-law, who fled the pogroms to America, and in 1882 he arrived in New York.¹⁰

Bloom was part of a huge wave of Jewish immigration to the United States in 1881–1890 of about 193,000 persons, 135,000 of whom came from Russia. Many were young skilled workers like him, and well acquainted with the material consequences and local-political expression of ethnic and religious hatred. He found work at a jewelry workshop in the East Side and made ends meet in peddling in New Jersey and among farmers in the Catskill Mountains. In 1885, the rest of his family joined him and the need to provide for the large family brought Bloom to settle in Philadelphia, one of the largest Jewish communities in America. Here he could earn more from shifting between jobs in jewelry (making rings, cases, and watches) and metal factories. He married the daughter of a jewelry's Jewish owner, and now with a family of his own he began looking for a more rewarding career.¹¹

At the time the American dental world was undergoing a two-fold transformation. One process was the social expansion of the demand and consumption for the medical and aesthetic correction of the body, itself an expression of the enhanced linkage contemporary dental professionals were increasingly propagating between oral hygiene and overall health.¹² The second process was the gradual change in use in the making of false teeth from wood, ivory, and dead humans to porcelain and vulcanite. Similar to aesthetic surgery and body prosthetics, the two process, were reciprocally linked by paralleling technological inventions, scientific discoveries, and their industrial applications, and growing consumption—of sugar in particular.¹³

The introduction of porcelain in the manufacture of denture teeth—in which Bloom would soon be employed—was a slow process and introduces the initial entanglement of local political, technological transfer, and politics of patents. Porcelain was first used in the 1770s by apothecary Alexis Duchâteau and dentist Nicholas Dubois De Chemant in Paris. Further applications were made in 1808 by the

10. Bloom, *My Memories*, 51–62; Tidhar, *Encyclopedia*, 204; *Palestine Post*, “Reflections,” September 12, 1941; *Palestine Post*, “Mr. Samuel Bloom Dead at 81,” September 11, 1941.

11. Bloom, *My Memories*, 62–74.

12. Picard, *Making the American Mouth*, 14–41.

13. Mintz, *Sweetness and Power*; Woodforde, *The Strange Story*, 51–63.

Italian dentist Guiseppangelo Fonzi, and in London in the 1820s by the English goldsmith Claudius Ash. Significantly, the growing usage of feldspar, kaolin, and quartz as major constituents of dental porcelain, and the baking of the porcelain teeth with attached platinum hooks, cheapened the entire production of false teeth. The cheapened process was brought to Philadelphia by the Parisian dentist Antoine Plantou already in 1817 but manufacturing by Samuel W. Stockton began only in 1825. As it was still customary to set porcelain teeth on base plates made of gold, only the rich could afford them—let alone the treatment of the dentist.¹⁴ The growing use in the following years of platinum, tin, and silver for the denture base on which the porcelain teeth were fixed further cheapened production and treatment, but were hardly sufficient to allow wider consumption. In the 1840s, Samuel S. White introduced further improvements that made porcelain tooth even more attractive to use: they promised whiteness, translucency, and generally better cosmetic appearance and it could supplant animal and human products. However, the denture base remained too costly. The painful tooth extraction lingered on as the typical treatment of dental pain and it would take another three decades for the advances to make a wider medical and commercial effect.¹⁵

Two changes drove the transformation of false teeth production. The first emerged in 1839 when Charles Goodyear discovered in Woburn Massachusetts how to create hardened and elastic vulcanized rubber from Caoutchouc (natural rubber) mixed with sulfur. In 1851 Goodyear's brother, Nelson, invented the vulcanite, patented the vulcanizing process, and showed it in the Great Exhibition. The new vulcanite denture bases did not have a pleasing appearance. But they were considered less of a luxury, more durable, easy to work, and could be molded to fit the ridges of the patient's mouth and thus enabled the dentures to be worn with comfort. The parallel change was the growing use of ether and anesthesia in dentistry pioneered in Boston in the mid-1840s by dentists Horace Wells and William T. G. Morton. Tooth extraction and the setting of false teeth would become now painless and more socially accessible.¹⁶

The intertwining advances of vulcanization and anesthesia made the production of porcelain false teeth less complex, and they triggered in the 1860s and 1870s the proliferation of laboratories and workshops.

14. Freedley, *Philadelphia and its Manufactures*, 398–9; Kelly, Nishimura, and Campbell, “*Ceramics in Dentistry*.”

15. Bremner, *The Story of Dentistry*, 209–15; van Noort, *Introduction to Dental Materials*, 6–10; Woodforde, *The Strange Story*, 51–63.

16. Bremner, *The Story of Dentistry*, 209–15; Engelmeier, “The History and Development of Posterior Denture Teeth,” parts 1 and 2; Agnew, *Medicine in the Old West*, 208–9; Rey, *The History of Pain*, 145–54, 224–51; Ladha and Verma, “19th Century Denture Base.”

However, its only barrier to turn into a mass production industry was that every dentist had to pay the Goodyear Dental Vulcanite Company for the license to use it, and for the royalty on each denture. That barrier, and the increasing power struggles between the dental patentees, the dentists, and the manufacturers (in both the United States and the United Kingdom), were among the reasons why the use of animal bones and teeth of fallen soldiers persisted well after the Crimean War and the American civil War. Only in 1881 when the Goodyear patent on vulcanite denture expired the wider production of vulcanite dentures set with porcelain teeth, and the wider consumption by many in the western world who were seeking facial and mouth correction, oral hygiene, and clean breath became possible. This was the dental business scene which the young Bloom entered.¹⁷

Mid-1880s Philadelphia offered Jewish skilled craftsmen like Bloom a growing number of dental (and highly inventive) factories. His background in jewelry in Russia made him a fitted candidate for apprenticeship in mold cutting, and in 1885 he was hired by the dental factory of Gideon Sibley—one of the factories that now enjoyed the expiration of the Goodyear patents. Here Bloom was inducted by an English mold-cutter expert, Alfred Page, with whom he would collaborate in the following years on some of his patents. Because of a blend of anti-Semitic and anti-Russian sentiment in the Sibley factory he was allowed to work from home, a sort of a piece-work arrangement that would shape his later managerial perceptions. In summer 1886, Page introduced him to the Wilmington Dental Manufacturing Company that later merged to become one of the principal dental producers—The Dentists' Supply Company of New York, later known as Dentsply.¹⁸

Between 1891 and 1909 Bloom patented nine inventions and technical improvements that earned him a prime place among the modernizers of porcelain false teeth making.¹⁹ The starting point to

17. Rothstein, *History of Dental Laboratories*, 63–8; Guise-Richardson, “Redefining Vulcanization”; Johnson, “The History of Prosthetic Dentistry”; Dragon, “Rubber”; Bloom, *My Memories*, 85–92; Jones, *Beauty Imagined*, 78–80; Ott, Serlin, and Mihm, *Artificial Parts, Practical Lives*; Browner, “Ideologies of the Anesthetic.”

18. Bloom, *My Memories*, 74–81; Alroey, *Bread to Eat and Clothes to Wear*, 10–13; Wilmington was established in 1866 by dentist Ezekiel Shelp. In 1879 dentist Jacob F. Frantz cemented Bloom's position in the company. In 1889 it was incorporated as The Dentists' Supply Company of New York. See Conrad, *History of the State of Delaware; Items of interest*, 1891, 341; Great Britain, *The Monopolies Commission*.

19. Page and Bloom, *Artificial Tooth*, January 27, 1891; Bloom, *Artificial Teeth*, August 31, 1897; Page and Bloom, *Mold For Artificial Teeth*, November 8, 1898; Bloom, *Artificial Tooth and Anchor*, December 30, 1902; Bloom, *Tooth-Crown Anchor*, February 21, 1905; Bloom, *Artificial Tooth Mount*, January 3, 1908; Bloom, *Artificial Tooth*, January 5, 1909.

understand the innovations was that the porcelain teeth were secured to the denture base with platinum–iridium pins that were baked into the tooth’s structure. In the late 1880s the cost of platinum rose, apparently because of its use in diamond setting and the contemporary rise in demand for diamonds. Bloom sought—under the direction of George H. Whiteley at the dental manufacturing company—to cheapen the process by reducing the amount of platinum required. He made a little hole where the pin was to be, and at the bottom of the hole he inserted a small platinum wired ring—one-fiftieth of the cost of a whole platinum pin. The tooth was baked together in a mould with the ring, and then a pin of a cheaper metal was soldered to the platinum ring. Consequently, not only was the cost on the platinum reduced, but the stress on the tooth and the danger of tooth breakage were lessened. The 1891 patent on this “soldered-in pin tooth” was the infrastructure of many later improvements, and the royalties paid on using them allowed Bloom to experiment further. By the end of the century Bloom, with seven patents to his name, came to be considered one of the world’s false teeth experts.²⁰

Bloom’s reputation and the capital he accumulated from selling rights to use his patents solidified his independence and enabled further entrepreneurial moves. At the turn of the century he started the Standard Dental Company, and a few years later enlarged the factory which he now named Artificial Teeth Factory. He could link himself with other dental companies (such as the renowned Swiss company De Trey), and soon became an employer of 350 employees and selling agents.²¹ Moreover, Bloom was well attuned—similar to many Progressive Era industrialists—to new managerial ideologies espoused by Frederick Winslow Taylor and later by Judge Louis Brandeis, with whom he would later be associated in the context of Zionist politics. Bloom applied in the production of the porcelain teeth what Brandeis would later define as Scientific Management, with an overwhelming emphasis on training the workers in the distinctive skills of porcelain false teeth making, and on introducing notions of efficiency to marketing them. He devised a scheme, perhaps influenced by his background in peddling, in which itinerant salesmen, without relying on a single organized dental depot, would sell the merchandise from grips that were replenished each night

20. Bloom, *My Memories*, 84–90, 107–21; Rothstein, *History of Dental Laboratories*, 68–79; *Mischar Vetaasiya*, “Artificial Teeth Factory in Tel Aviv,” May 30, 1930 (H); S.S. Bloom Company to Israel Brodie, January 26, 1932, PEC.

21. Bloom, *My Memories*, 84–90, 107–21; Rothstein, *History of Dental Laboratories*, 68–79; S.S. Bloom Company to Israel Brodie, January 26, 1932, PEC; *Davar*, “Bloom Teeth Factory,” December 26, 1926 (H). Note that Bloom’s initial decision to immigrate to Palestine was in 1909 when he registered his last patent.

from stocks of teeth they carried at home. The decentralized system was later applied also in sales in European countries, and was further developed during World War I. The effect of this efficiency-driven marketing was the creation of a large scale commercial web that, as will be seen later, served the marketing of porcelain teeth outside the United States for many years to come.²²

Bloom's family in Philadelphia was now economically secure. He could send his son to study engineering and also toy with the idea to combine his work with agricultural farming in Cumberland County, New Jersey (in conjunction with the Jewish Agricultural Colonies movement). More significantly, he began giving charity in the Philadelphia Jewish community, and supported the local Jewish congregation and synagogue of which he, as a moderately religious man, was a member. Soon he became active in the circles of the Zionist movement in the town, and in 1898 was elected a delegate to the Second Zionist Congress in Basel. With the background of a Jewish refugee from pogrom-stricken Russia, and now well versed in the politics of patents and dental company mergers, he turned, during the first decade of the twentieth century, to a new sort politics, Zionist nationalism.²³

The basis of Bloom's Zionism was rooted in his Judaism and background in Jewish communal life in the Lithuanian Shtetl. However, in his Zionist activities in the early 1900s he attached himself to judges Brandeis and Mack who espoused the building of Palestine through capitalist ways, and provided charity and assistance to the Zionist cause in Palestine; that is, without turning themselves into immigrants and active settlers.²⁴ Bloom even developed a more active approach to the need for direct purchase of lands from Arab owners, and provision of financial assistance to poor Jews. And following his visit to Palestine in 1908 he began cultivating the idea to abandon Philadelphia altogether. The plan was to relocate and associate his participation in the Zionist project with experiments in dental production to be conducted at the Bezalel arts and crafts school in Jerusalem.²⁵

The delay in materializing these ambitions demonstrated a mix of personal and political factors. First was the customs set by the

22. Bloom, *My Memories*, 110–21, 134–8; Rothstein, *History of Dental Laboratories*, 79–81.

23. Held since 1897 the Zionist congresses were the debating and decision-making arenas of the Zionist movement. See Berkowitz, *Zionist Culture and West European Jewry*, 8–76. On Zionism and technological change see Penslar, *Zionism and Technocracy*, 1–10.

24. On Bloom's affiliation with Brandeis see Glass, "American Olim and the Transfer of Innovation," 215–16.

25. Glass, *From New Zion to Old Zion*, 299–301; Bloom, *My Memories*, 125–8.

Ottoman regime, which threatened to increase the cost of the import (mostly from Canada) to Palestine of the raw materials for preparing the porcelain teeth and the vulcanite denture bases. The second reason was Bloom's worry for his family in case the war reached the country, and his reluctance to disengage from the business networks he had established so diligently and successfully since the mid-1880s. Instead Bloom would now use his fortune to become active in the organization in Philadelphia of the American Jewish relief funds for the Jewish community in Palestine, and, from 1917, to purchasing Arab land.²⁶

Industrial Migration

The inseparability of material and political–ideological motivations explained why at the last stages of the war Bloom finally set his mind on re-immigration. While still tied by a contract to Dentsply he joined a new artificial teeth factory—Universal Dental Company—which his son-in-law established in Philadelphia in April 1917. Here Bloom was in charge of scientific and technological development, training of the workers, and the sophistication of the “grippers” marketing system. However, in early 1919 his contract with Dentsply expired and could not be renewed because Bloom bound the rights to use some of his patents to the new factory. At the time only 15 porcelain teeth factories and laboratories operated in the world, many of which were in the Philadelphia and New York areas, and in the oligopolistic competition among them over contacts with dealers and dentists Dentsply was superior.²⁷

The change the 60-year-old Bloom felt he needed now was triggered, however, more by political than material reasons. In April 1917, the British foreign secretary Arthur James Balfour issued the declaration in favor of the establishment in Palestine of a national home for the Jewish people. The conquest of Ottoman Palestine by the British forces was soon underway. For Bloom, as for many others in the Jewish world, these landmark events transformed deep-seated perceptions regarding the feasibility of the Zionist project. In the next five years the British Mandate government of Palestine, operating

26. Felsdpar was bought mainly in the Quebec region Canada. See *Davar*, “In the Industry (Artificial Teeth),” December 26, 1926 (H); Bloom, *My Memories*, 134–6; S.S. Bloom Company to Israel Brodie, January 26, 1932, PEC. Relief funds were channeled through the American Jewish Joint Distribution Committee established in 1914. On Zionist capitalism see Karlinsky, *California Dreaming*, 21–45.

27. Bloom, *My Memories*, 134–6; on Dentsply and Bloom's son-in-law Joseph Kohn see Rothstein, *History of Dental Laboratories*, 79–81. See also Gross, “Jewish Entrepreneurship in a Capitalist Economy.”

under the British Colonial Office, and accountable to the League of Nations, created new conditions for economic change in Palestine. These were accompanied by massive migration of skilled workers, small business, and private capital that by the mid-1920s seemed to further expand the business opportunities Palestine offered. This was true in particular in Palestine's urban sector where a Jewish middle and working classes were emerging.²⁸

The contrast between the images of the negative impact of the Ottoman regime on Palestine on the one hand, and the commitment of the British to support the Jewish community that these new conditions reflected on the other, were well felt by entrepreneurial industrialists in America such as Bloom. This was borne out in the stormy atmosphere at the convention of the Zionist organization in Cleveland in June 1921 in which Bloom participated. Here the Brandeis group, with which Bloom was associated since 1898, linked itself to the new conditions by emphasizing practical economic work in Palestine, efficiency in managing Zionist funds, and separation between politics and the working of free enterprise and private capital. Strongly believing in the capitalist path that Zionist building should follow Bloom was hardly deterred by the absence of a market in Palestine for his products. On the contrary, a totally export-oriented industry and one dependent solely on raw materials non-existent in Palestine, were part and parcel of that logic.²⁹

Fully convinced of the depth of the political and economic change Palestine was undergoing Bloom began now his final arrangements for immigration. He visited the country in 1922 to check locations, and in 1924 he started in Philadelphia a small factory to prepare the materials, the moulds, and the equipment to be transferred.³⁰ In August 1926, Bloom and his family arrived in Tel Aviv and in October 1926 the new factory could practically start its operation. The arrival of a well-to-do Jewish American industrialist to a town which knew an economic take-off just two years before, and was now stricken by bankruptcies, unemployment, and growing Jewish emigration away from Palestine, was somewhat reminiscent of Bloom's return from the Russian army to his poor family in Vilkomir more than four decades before.³¹

28. Smith, *The Roots of Separatism in Palestine*, 160–81; Gradus, Razin, and Krakover, *The Industrial Geography of Israel*, 34–50.

29. Zionist Organization of America, *Report of the Proceedings*; Gal, "Brandeis's View on the Up-building of Palestine"; Revusky, *Jews in Palestine*, 79–81.

30. Bloom, *My Memories*, 139–43; American Porcelain Tooth Co. to Israel. E. Brodie, January 6, 1932, PEC; *Palestine Post*, "Trespassing Report Denied," May 16, 1933. Tel Aviv was chosen for the location of the factory following a meeting Bloom held in Philadelphia with the town's Mayor Meir Dizengoff.

31. Bloom, *My Memories*, 139–43; Bloom Company to Israel Brodie, January 26, 1932, PEC.

The opening of the factory that Bloom entitled deliberately “American Porcelain Tooth Company & Co.” (hereafter APTC) could be explained in the context of the history of dental prosthetics or that of industrial migration. For in the final analysis the event, which was driven by many noneconomic reasons, was part of a long-term process that began in Europe and in the United States in the late nineteenth century of the flourishing of foci of industrializing dental production, and of a geographically widening reaction to growing social demand for mouth correction and oral health.³²

It was, however, more complex than that. First, the establishment of the factory in Tel Aviv expressed a mixture of transfer of knowledge and capital to a society that perceived itself as building a national economy and a state, and one that destined Jews to become a majority in the country. Political aspects—national and colonial—were therefore part and parcel of the birth of the factory. Bloom’s and his son’s declaration at the outset that their factory would employ only Jews—in particular in the context of the growing unemployment in the country and the diversion of part of their capital and gains to private acquisition of lands from Arabs—were clear expressions of these ethnic-national and political orientations.³³

Secondly, the factory depended entirely on import of raw materials, and from the start oriented its production mainly for export. These business characteristics told a lot on the economy in which the factory was established, and on the new spatial dynamic of the factory’s commercial aims. The reputation of the factory as a distinctive Middle Eastern focus of modernization, inventiveness, and skill was quickly spreading; and in many countries it came to be perceived as a reliable source for industrial applications of up-to-date advances in porcelain teeth making.³⁴ And thirdly, the factory was run from the start, as connoted by its name, along Americanized lines of managerial authority and emphasis on occupational training, while at the time employing mainly Jewish women. The gendering of the labor force originated in the wish to mix ethnic exclusion with saving on labor costs; but at the same it also reflected a policy to employ the

32. *Palestine and Near East Economic Magazine*, “Artificial Teeth,” 2, 1926, 84; *Mischar Vetaasiya*, “Artificial Teeth Factory,” April 25, 1926 (H); *Davar*, “In the Industry,” December 23, 1926 (H). Gradus, Razin, and Krakover, *The Industrial Geography of Israel*, 45–6. The expectation was that the factory would employ 200–250 workers and produce 15–30,000 porcelain teeth a day.

33. Frenkel, Shenhav, and Herzog, “The Cultural Wellspring of Zionist Capitalism”; Sufian, “Defining National Medical Borders.”

34. *Davar*, “In the Industry (Artificial Teeth),” December 23, 1926 (H); *Mischar Vetaasiya*, “Artificial Teeth Factory in Tel Aviv,” May 30, 1930 (H).

sector—women workers—that was less strongly unionized and less prone to collective action at factory level.³⁵

These employment policies and the growing reputation of the factory as a modern workplace—indeed an example of the effect of the import of skill and capital on Palestine’s industrialization—brought about ambivalent reactions. It was legitimized by the leaders of the Jewish community in Palestine and Tel Aviv as a highly-valued private capital promoter of a Zionist economy—especially in times of economic downturn. At the same time it was denigrated by the Zionist labor movement as importing to the Jewish society in Palestine some of the negative aspects of American capitalism. This was a new kind of status politics and legitimating rhetoric that Bloom hardly knew in Philadelphia, where union representation of technical and laboratory workers was weak. The debate in American Zionist circles may have taught him the extent of criticism of free enterprise voiced by the opponents of the Brandeis camp, and by labor representatives that came from Palestine. But the tension with labor that built up around his factory shortly after its establishment contrasted to Bloom’s self-image as a Zionist philanthropist and an industrial modernizer, and they seemed far from abating.³⁶

Resources and Politics

The tension could be explained by the fact that labor costs have always been high in the highly skilled manufacturing of false teeth. Moreover, it was an industry in which replacement workers to be quickly apprenticed could not easily be found. This was certainly a weighty factor in the international competition among the producers of false teeth during the inter-war period. However, the explanation of the tension in the APTC is wider, and must consider the fact that despite the financial resources, know-how and world commercial reputation the company brought to Palestine it depended on many forces whose guiding logic was not only economic, but often political and ideological. In analyzing the company’s absorption in Palestine three such sources should be emphasized: financial credit, community standing, and colonial interest.³⁷

35. *Dvar Hapoelet*, Hanna Lamdan, “The Woman Worker in Tel Aviv,” October 1937, 131–3 (H); *Palestine Post*, “American Capital in Palestine,” February 3, 1937; Shulamith Schwartz, “Americans in Palestine,” *Jewish Frontier, Anthology 1934–1944* (1945); Katvan, “‘That Was the Beginning’.”

36. *Davar*, Ben-Bait, “On the Ways of a Factory Owner in Palestine,” July 8, 1928 (H); see also Biger, “The Development of the Urban Area of Tel-Aviv.”

37. *Palestine and Near East Economic Magazine*, “Artificial Teeth Factory,” 3, 4, 1927, 91; *Mischar Vetaasiya*, “In the Artificial Teeth Industry,” March 4, 1927 (H); *Davar*, Ben-Bait, “On the Ways of a Factory Owner in Palestine,” July 8, 1928 (H).

Apparently Bloom's least worry was credit. In the early 1930s it was estimated that since his first acquisitions of land in Palestine during the war, the establishment of the tooth factory in 1926, and the further land and urban property purchases he made since his immigration he had invested approximately a half a million US dollars. Relative to the average private capital owner who immigrated to the country in the 1920s this was quite substantial.³⁸ The investment in setting up the factory, training the workers, purchasing the raw material abroad, and paying the marketing agents and sellers in many countries were considered a complex and expensive operations to carry out. The large plots of land he bought from Arabs in the late 1920s and the respective drilling of wells may have more than equaled his industrial investment. His income was, however, no less significant. The factory's exports between 1928 and 1931 quadrupled (from 4,372 to 16,152 Palestine Lira, respectively), and to these was added an income from leasing the lands and the wells to agricultural recruiting groups and orange growers.³⁹

In view of the modest and expensive credit banks that Palestine offered Bloom had to resort, like many other contemporary manufacturers, to financial resources outside the Jewish community and away from Palestine itself. Among these were the Palestine Endowment Fund and the Palestine Economic Corporation in America with which Bloom was acquainted because of his earlier contacts with judges Brandeis and Mack, and because of his participation in the Zionist networks and fund raising in Philadelphia for the Zionist cause. As both companies destined themselves to support the business development of Jewish companies and industries in Palestine, their economic motivations were closely intertwined with Zionism and with capitalist-based Jewish economic nation-building that Bloom himself cherished. The credit and loans he received from them in the early 1930s, partly to withstand the threats of the world economic crisis, suited the character of Bloom's economic operations in Palestine as an industrial entrepreneur and land buyer. Bloom fitted the image of the typical debtor driven by the ideological conviction of Zionist capitalism. Business transactions apart, the reciprocity was politically and ideologically founded. And it could

38. S. S. Bloom to Judge Julian Mack, September 14, 1931, PEC; on capital import into Palestine see Metzger, *The Divided Economy*, 105–6.

39. *Davar*, "In the Economic Field," March 21, 1929 (H); S. S. Bloom to Judge Julian Mack, September 14, 1931, PEC; *Palestine & Near East Economic Magazine*, "Artificial Teeth," 10–11, 1932, 291; Arie Schenkar to Meir Dizengoff, April 27, 1933, TMA, A-4-3067; Meir Dizengoff to Mr. Jacobson, May 8, 1933, TMA, A-4-3067; *Palestine Post*, "Trespassing Report Denied," May 15, 1933. For exports, see [table 3](#) in the appendix.

cement for Bloom the local status as a rich man and a benefactor, provide legitimacy in the eyes of the Zionist political elite—an extension of being a Philadelphian Jewish parvenu or social climber. This is why attention should be paid to the second type of sources on which the company depended.⁴⁰

While obtaining credit from ethnic entrepreneurial resources in America could almost be taken for granted, support from the Jewish community in Palestine itself was more complex. The Jewish community that absorbed the Blooms and their company was still building itself economically and still solidifying its Jewish social and communal boundaries. The town was as old as were Bloom's years in Philadelphia, and it was undergoing a dramatic demographic and economic transformation. The economic downturn in Palestine in 1925–1927 that coincided with Bloom's arrival and initial absorption was for industrialists and manufacturers a moment of reckoning.⁴¹

As a business the factory had to be authorized by the Palestine government but the initial backing it needed to receive was from the Municipality of Tel Aviv, the bureaucratic framework of the local community. The latter demanded various municipal taxes, oversaw the industrial location and operation, and connected the factory both to sources of water—so imperative in the delicate preparation of false teeth materials—and to the sewage water pipeline on the sea shore. Supporting the factory was a corollary of the cultivation of Tel Aviv as a Jewish town, deeply engaged in Zionist development and industrialization, not least in employment of Jewish immigrants and preference for Jewish unemployed. The five years exemption from local tax the municipality gave the factory reflected this welcoming atmosphere; the latter adding to the obvious absence of porcelain teeth factories in the Middle East, and indeed their paucity in the world.⁴²

40. S. S. Bloom to Judge Julian Mack, September 14, 1931, PEC; Julian Mack to B. Flexner, September 16, 1931, PEC; Julian Mack to S. Bloom, September 16, 1931, PEC; Dr. Bernhardt to Mr. Flexner, October 20, 1931, PEC; A. S. to Julian Mack, October 26, 1931, PEC; A. S. to Robert Szold, November 2, 1931, PEC; S. S. Bloom Company to Israel Brodie, January 26, 1932, PEC; Leon Bloom to R. Levin Epstein, April 11, 1934, PEC. On land purchase see Amit-Cohen, *The Riddle behind the Cypresses*, 114–16; on capitalist Zionism see Lavsky, "Is there an 'Essential' Link between Jews and Capitalism"; on ethnicity and entrepreneurship compare with Tenenbaum, *Credit to Their Community*.

41. Giladi, "The Economic Crisis during the Fourth Aliya"; Metzger, *Divided Economy*, 77–8.

42. *Davar*, Ben-Bait, "On the Ways of a Factory Owner in Palestine," July 8, 1928 (H); S. S. Bloom to the Municipality of Tel Aviv, November 13, 1927, TMA 4-3066 (H), Rehavia Feinstein's letters to the Municipality of Tel Aviv, February 2, 1928, October 30, 1929, and December 15, 1929, all TMA 4-3066 (H); see also the response of David Bloch to the factory, February 8, 1928, TMA, 4-3066 (H).

Soon Samuel Bloom and his son Leon (who from the late 1920s practically ran the firm) became well renowned among the town's people. As an employer of Jews the factory was praised as fulfilling a Zionist ideal of ethnic preference, of being a focus of apprenticeship in special skills, and of producing an essential means of mouth care for which world demand was steadily growing. The factory was perceived now as a formative component in Tel Aviv's economic recovery and industrial growth. And as an owner of private capital and industrialist Bloom became a member of the local national-economic elite that was both seeking profit and economically buttressing the Zionist cause. In addition to Bloom's local fame as a land buyer in Palestine at large he also enjoyed business connections with Tel Aviv's Mayor, Meir Dizengoff, with whom he collaborated in the establishment of the local General Insurance Company.⁴³

The sums Samuel Bloom donated to an orphanage and for the building of Tel Aviv's first hospital for mental patients solidified his status as a "Nadvan," a philanthropist, which he cultivated since his days in Philadelphia and the American relief for Jews in Palestine during World War I. However, most notable perhaps was Bloom's acquaintance with Haim Nachman Bialik, the national poet. Bloom responded to Bialik's initiative to create a Jewish cultural and writers' center in Tel Aviv, and donated the funds for an auditorium, where since May 1929 talks were delivered and debated, mixing traditional Judaic themes with secular and national issues, thus turning the place (and Bloom's renown as a benefactor) into a widely shared social scene in the burgeoning town. The ability of Bloom to navigate these religious, secular, and national structures of Tel Aviv society were a clear reflection of his religious upbringing and experience of anti-Jewish hatred; but also of his Zionism as reactive and constructive, a way of life in which business and entrepreneurship played an essential part.⁴⁴

In contrast to these sources of communal worth and public backing stood the challenge set by the General Federation of Jewish Labor (the Histadrut). The commonality of interest between the Blooms and

43. The Palestine Company for General Insurance was associated with Lloyds, the latter having established myriad insurance contacts in Palestine and in Middle East in general. On Bialik's relations with American Jewry and Jewish philanthropists such as Bloom and Israel Metz (founder of Ex-Lax) see Brown, *The Israeli-American Connection*, 96–7. See also Amit-Cohen, "Economic and Zionist Ideological Perceptions."

44. Bloom, *My Memories*, 141–5; Bialik, "Al Te'udat Ohel Shem"; Samuel Bloom to the Executive Council of the Zionist Organization, April 3, 1927, CZA, S25/525 (H); Avineri, "How did 'Oneg Shabat' Electrify the Yishuv." The gathering was known as Oneg Shabbat (Joy of Sabbath) and the 1,200 seat auditorium donated by Bloom was Ohel Shem, God's tent.

organized labor and the workers' committee in the factory was, as we saw earlier, based on the Zionist notion of the preference for Jewish labor. However, tension mounted over the unwillingness of the Blooms in the early 1930s to accommodate the wages of the women workers with the rising standards of living in Palestine. Such accommodation was needed, so the workers argued, in particular because of the physical pressure of the hard work on the workers and the harsh discipline at the factory. Sensing the threat of the world economic crisis on potential declining demand for the factory's products the Blooms were reluctant to give in to the demand, and to labor's attempt to exert influence on management's policies. The company's dependence on the workers and on the minute performance of the skills that they learned in the factory itself only brought the Blooms to further persist in their style of management of the factory, even at the cost of a rift in the local community it may bring.⁴⁵

In 1933 the tension with the workers turned into an open conflict. The economic boom in the Jewish economy (following increasing import of capital in 1933–1934 due to political events in Europe), and the clear indications of the factory's success in marketing porcelain false teeth abroad (see [table 1](#) in the appendix), convinced the workers the time was ripe for pressure to improve wages and working conditions.⁴⁶ In parallel, however, another conflict added fuel to the fire when organized labor protested against the employment of unorganized workers at the orchard in Karkur that the Blooms leased to a Jewish contractor. This was one of many cases bursting out in the Jewish community in 1932–1934 in which labor's growing political power and quest for exclusivity in the labor market faced strong opposition from the Zionist political Right and some liberal circles. In addressing directly the thorniest issue of labor cost both conflicts seemed to the Blooms a clear attempt by organized labor to intervene in their operations. It was, therefore, against this aggravating tension in power relations with the workers and organized labor that the Blooms began to plan a dramatic

45. *Davar*, Ben-Bait, "On the Ways of a Factory Owner in Palestine," July 8, 1928 (H); *Davar*, "Towards a Dispute at the Bloom Factory?" September 14, 1933 (H). In 1933 the factory employed 166 workers and clerks, 100 of whom were woman. In 1942 the number of employees rose to 194. The majority of workers at the factory were represented by a workers' committee and because of the large number of women workers that committee was accountable to two Histadrut organs: the Tel Aviv Labor Council and the Women Workers' Council. Only a minority of workers was unaffiliated.

46. *Davar*, "Is a Dispute Forthcoming at the Bloom Factory?" September 14, 1933 (H); Factory's management to the Histadrut Executive, October 25, 1933, CZA, S8/1082 (H); Eliezer Kaplan to Samuel Bloom, October 29, 1933, CZA, S8/1082; *Davar*, "Exchange of Letters," November 21, 1933 (H); Workers' Committee to the factory, January 24, 1934 and February 7, 1934, both LA/IV-250-72-1-676.

move that involved a much more weighty set of relations, this time with the British authorities, the third and most crucial force on which the company depended.⁴⁷

The British presence in Palestine was from the start crucial for capital owners like Bloom who first invested in Palestine, later immigrated and started a business. On the one hand the Palestine government upheld the Open Door clause of the Mandate, which exposed Palestine to dumping of goods and therefore to serious competition with locally produced goods. At the same time, the British encouraged and supported what they perceived as “strong sectors” advancing Palestine’s economy and development, namely capital owners, entrepreneurs, and industrialists. The latter was to serve the government in saving on the cost of the upkeep of Palestine so as to lift the burden on the British taxpayer. Moreover, the colonial approach corresponded to the free enterprise views of industrialists such as Bloom, for long an avid supporter in Zionist economic politics of Judge Brandeis. In this context the question of duties on the import of raw materials into Palestine was essential. While levying 12 percent ad valorem of the price of the materials imported (as it was during the Ottoman period), the British provided a variety of exemptions, both in order to protect the local industry and to assist in importing needed materials. The ambivalence of the system provoked persistent political pressure on British officials, with the Zionist movement and the Jewish Agency (its representative in Palestine) proving to be highly effective.⁴⁸

Bloom’s factory depended on import of gold-plated wires, coils, and Feldspar (mainly from Canada) and on the exporting of the artificial teeth to Britain and to other countries in the British Empire. The protection of the Palestine government was therefore direly needed so that the growing labor costs demand by Jewish organized labor would not harm the factory’s profitability.⁴⁹ Despite its perception of the factory as an economic and technological wonder the government hesitated to alleviate the import duties fearing Arab reaction. And only after Bloom locked out his workers for a few weeks and recruited

47. *Davar*, “In the Village,” December 20, 1932 (H); see also short notices on the factory in *Palestine Post*, May 19, 1933, June 7, 1933 and October 25, 1933; *Davar*, February 16, 1934 (H); *Doar Hayom*, July 6, 1932 (H); Amit-Cohen, *The Riddle behind the Cypresses*, 115.

48. Weinryb, “Industrial Development of the Near East”; Gross, “The Economic Policy of the Mandatory Government in Palestine,” parts 1 and 2; Metzer, *Divided Economy*, 177–8; Smith, *Roots of Separatism*, 23–5; El-Eini, “Trade Agreements.”

49. *Mischar Vetaasiya*, “In the Artificial Teeth Industry,” 4, March 4, 1927 (H); *Palestine and Near East Economic Magazine*, “Artificial Teeth Factory,” 3, 4, 1927, 91; *Palestine Post*, July 18, 1933; *Palestine Post*, “Between the Lines,” December 25, 1935; Glass, *From New Zion to Old Zion*, 299.

the backing of the Jewish Agency and the Tel Aviv municipality did the government grant a temporary exemption.⁵⁰

However, following the world depression and the turn of the MacDonald government in Britain to massive protection of its industries, every industry not in the imperial system—as was Mandate Palestine—was considered a competitor. The protective policy that significantly harmed Bloom's factory because of the focus of his exports on Britain was given a formal expression in the Ottawa conference in 1932, in the Imperial Preference System.⁵¹ For the anxious Bloom and for many Palestinian exporters the special customs exemptions given to British colonies but not to Palestine amounted to erecting a disastrous 10 percent "customs wall" on their products. Not much could be done politically to change the exclusion of Palestine, not even concerted pressure by the activists of the Zionist movement in New York and London. It was this mix of the "Ottawa disaster" and the aggravating conflict with labor over wage increases that brought the Blooms to decide in 1934 to take a sharp turn.⁵²

Off-Shoring

"The American Porcelain Tooth Company" now faced now a dissonant situation. On the one hand, it was too weak to press the British to change Palestine's exclusion and felt threatened by organized labor and the support of the factory's workers by the labor politicians in the Jewish Agency. On the other hand, political change in Germany opened up new opportunities. Following the Nazi seizure of power in 1933 and the progressive harassment of Jewish business

50. *Davar*, N. Dvori, "Government and Industry," March 10, 1927 (H); David Bloch to Samuel Bloom, March 1, 1927, TMA, 4-3066 (H); Samuel Bloom to Yehuda Nedivi, March 4, 1927, TMA, 4-3066; *Davar*, "Colonel Sims at the Municipality," June 14, 1927 (H); *Mischar Vetaasiya*, "Artificial Teeth Factory in Tel Aviv," May 30, 1930 (H); Smith, *Roots of Separatism*, 169.

51. Leon Bloom to R. Levin Epstein, April 11, 1934, PEC; Workers' committee to the factory's management, April 24, 1934, LA-IV-250-72-1-676; Leon Bloom to the workers' committee, April 26, 1934, LA-IV-250-72-1-676; *Davar*, "Editorial," May 9, 1934 (H); Leon Bloom to the Tel Aviv Labor Council, August 16, 1934, LA-IV-250-72-1-676; Glickman, "The British Imperial Preference System"; Drummond, *British Economic Policy*, 89–120.

52. On British reaction see reports on the Palestine exhibition in London in 1933 and in the absorption by the factory of Jewish refugees from Germany, see *Palestine Post*, "The American Porcelain Tooth," July 18, 1933, and "American Porcelain Tooth," December 1935; *Davar*, "In the Artificial Teeth Factory," June 19, 1935 (H). The extent of competition in the global denture market during the 1930s, in particular by British companies, is still to be researched and therefore is absent from the discussion here.

and professionals the American Jewish Congress began organizing in 1934 the boycott of German goods and services. The west and central European dental markets, in which many Jewish dentists operated and in which the German and the Lichtenstein-based false teeth products were until now quite dominant, was widely open. The only way the Bloom factory could exploit the opportunity and enter more aggressively into the new markets was to bypass the British imperial preference system by relocating the factory to a country within the Empire, even to England itself.⁵³

In August 1934, after cancelling out the English option, the Blooms established The Empire Dental Industry, Ltd. in Larnaca, on the southern coast of Cyprus. The logic was simple. Cyprus was geographically close to Palestine but it was, since 1925, a British Crown Colony, and thus was included in the Ottawa Preference system. Land prices in Larnaca were attractive and wages were lower than those paid to Jewish workers in Palestine. Similar to some Palestinian Jewish orange growers, who relocated to Cyprus at the time and for the same reasons, the Blooms sent a family member to run the factory—Bloom's son-in-law (Rehavia Raymond Feinstein), one of the managers of the plant in Tel Aviv. For both the tooth manufacturers and the orange farmers the move was economically driven, did not entail giving up their operations in Palestine, and thus can be hardly conceived as an expression of ambivalence toward their professed Zionism. In this off-shoring, and in the strategic exploitation of what the Empire offered, the ideologically-inspired move from Philadelphia to Palestine a decade before seemed, therefore, entirely different.⁵⁴

53. On the effects of the imperial preference system see the discussions of the British Royal Commission, *Palestine Post*, December 17, 1946. Exports of false teeth from Germany declined between 1929 and 1938 from 20 tons to 16, respectively, and virtually ceased following the outbreak of the war. The main destinations of German exports were to the United Kingdom, the United States, Hungary, Spain, and Australia. See Alfred Marcus, "The Replacement of Germany's past export of certain finished goods by export from Palestine," late 1944, CZA, S8/851. On the demand in Britain for Bloom's products see Revusky, *Jews in Palestine*, 81. Palestine's greatest competitor in Europe was Zahnfabrik Ramsperger & Co. AG established in Zurich in 1923 and turned in 1933 into RAMCO AG, based in Schaan, Lichtenstein (later turned into Ivoclar Vivadent AG). See Blevi and Sween, *Complete Book of Beauty*, 200.

54. Raymond Rehavia Feinstein to E. Mohl, April 3, 1932, PEC; *Davar*, "In the Factory that threatens to move to England," November 29, 1933 (H); *Palnews*, "Artificial Tooth Factory," 2, 16, April 17, 1934; *Palnews*, "Jewish Land Purchases," 2, 29, July 19, 1934 (H); Revusky, *Jews in Palestine*, 267–268; *Davar*, "Near East on Palestine Jews in Cyprus," June 20 1934 (H); *Palestine Post*, "Jewish Colonies in Cyprus," June 26, 1934; Ben-Artzi, "Jewish Rural Settlement in Cyprus." Rehavia Feinstein (later Adivi) met Bloom's daughter while studying engineering and management in Philadelphia. He joined his brother-in-law Leon Bloom in running the factory in Palestine. In the 1960s he was the Mayor of Ashkelon.

The immediate effect of the Larnaca offshore project was to have a second production line at a reduced cost. The profits solidified the finances of the company; and they also provided financial backing to another manufacturing operation that the extended Bloom–Feinstein family ran in Cyprus, of buttons (made of Dom nuts which were exported to Larnaca from Eritrea). The consequent balancing of the higher production costs in Palestine, and the concurrent growing share of the company’s products in Palestine’s industrial exports, brought from 1935 onward industrial peace with the workers; the latter realizing the weakening of their bargaining power caused by the existence of the second factory.⁵⁵

Even more significant was the further spatial expansion of the marketing of porcelain teeth to countries in eastern and central Europe such as Czechoslovakia, Romania, and Poland, and other parts of the British Empire—all in all some 56 market destinations. Not only did the move benefit the Cypriot economy but it also tightened Tel Aviv’s and Palestine’s commercial ties with the Empire and with markets in the Far East in particular. The new connection to Siam (Thailand) was one of the more interesting effects of the free marketing in the Empire and the challenge it posed to industries in Palestine.⁵⁶

The old customary chewing of the Betel plant in Siam, with the consequent staining of the teeth among males and females created local demand for black false teeth that were now produced in both factories and exported from Larnaca. As blackened teeth signified a communal act and at the same time indicated social and courting ties between the chewers, the black teeth were so to say legitimized. Siam’s location in the British Empire and the spreading social demand for black teeth, therefore, placed the factories as a link between various cultures of mouth correction and oral hygiene. It certainly demonstrated the Blooms’ attuning to changing patterns and varieties of demand for porcelain false teeth, and to their capacity (intermittently constrained

55. *Davar*, “At the Teeth Factory,” June 19, 1935 (H); Workers’ committee to *Davar*, June 24, 1935, LA/IV-250-72-1-676. The parallel lines of production also variegated the products, adding false teeth in hundreds of shapes and shades. The factory would now market itself as manufacturing “high-grade artificial teeth,” “gold pin teeth, platinum pin teeth and interchangeable.” See *Haqed Hadentali*, 1, January 1, 1937, 9 (H). On the reduction of labor costs see Office Memorandum, April 13, 1934, PEC; Nachum Tishby to the American teeth industry, July 17, 1938, CZA S8/1082. On the weakening of the workers’ power see Workers’ committee to *Davar*, June 24, 1935 (H), Rehavia Feinstein to the Tel Aviv Labor Council, June 25, 1935, July 23, 1935, and August 13, 1935, Y. Levinstein to the workers’ committee, July 12, 1935, workers’ committee to the Histadrut executive, July 11, 1935, all in LA-IV-250-72-1-676; *Hapoel Hatsair*, “Bloom,” August 23, 1945 (H). On the Dom-nut buttons industry see *Great Britain and the East*, “Cyprus Shows its Teeth,” August 27, 1936.

56. Raymond R. Feinstein to the Manufacturers’ Association in Tel Aviv, March 20, 1934, CZA, S54/318.

by imperial customs policies) to adapt to new markets and to develop widespread ties with selling agents. In turn their world reputation improved, especially now when the German false teeth exports were being blocked.⁵⁷

The two production lines of porcelain artificial teeth in Tel Aviv and Larnaca made, therefore, a great impression in dental industry circles in the Middle East, Europe, and beyond. Their variety, as described in one newspaper—"The darkest shade would match the molars of the most inveterate smoker, the lightest rivals the ivories of a beauty queen," was clearly adding consumers. And it joined the increasing reputation of the concentration of know-how and skill in Palestine that was later associated also with the flux of refugee professionals from Germany and Austria, or with the later industrial migration of the diamond cutting industry from Nazi occupied Antwerp.⁵⁸ It certainly pushed the factory in Palestine to further develop. Its labor force expanded to around 220 workers, and the company's stocks were now sold in the newly established stock exchange in Tel Aviv. In late 1935 the factory moved to a more spacious and technologically equipped building at the town's industrial margins.⁵⁹

The upgrading of the factory and the expansion of the labor force was coupled with the institution of premium wages and the opening of additional departments. "Scientific management" (which was diffused also to Larnaca) would be overseen now by Dr. Robert Nussbaum, a renowned Berlin dental practitioner and scientist, who continued the work on patents he started with Hermann Schroeder—one of the main figures in contemporary German dentistry.⁶⁰ In a

57. Zumbroich, "Teeth as Black as a Bumble Bee's Wings'."

58. Quote from *Great Britain and the East*, "Cyprus Shows its Teeth," August 27, 1936; see also Zamet, "Refugees from Nazi Oppression"; on refugees and the diamond industry see De Vries, *Diamonds and War*, 26–33.

59. *Palnews*, "Artificial Teeth Export from Palestine," September 17, 1935 (H); *Palestine Post*, February 11, 1935, "American Porcelain Tooth," May 22, 1935, April 2, 1937, December 29, 1937; *Jewish Frontier*, 3, 1936; see also the summoning of the stock holders in *Palestine Post*, "American Porcelain Tooth," December 6, 1935. The new location of the factory in Nahalat Yitzhak neighborhood was partly chosen because of the use of a river between Tel Aviv and Ramat Gan as a sewage outlet. See *Doar Hayom*, "Bloom Factory," August 1, 1935 (H); *Davar*, Travinsky, "Nahalat Yitzhak," November 26, 1936 (H).

60. *Davar*, "In the Artificial Teeth Factory," June 19, 1935 (H); *Palestine Post*, "Between the Lines," December 25, 1935, "Trade Marks for Local Products," August 19, 1938; Schroder and Nussbaum, "Artificial Teeth," November 6, 1930; Fritz Naphtali, "Vorschlag zur Schlichtung der Differenzen über Lohn-und Arbeitsbedingungen in der American Porcelain Tooth Company Ltd., Tel Aviv, November 20, 1938, LA-208-1-1587; Emil Schmorak to the Histadrut Executive, May 10, 1939, CZA S8/1082; *JTA Jewish News Archive*, "British Gird for trouble in Palestine," March 17, 1939; *Misparim: Annual of the Tel Aviv Labor Council* "Artificial Teeth," 1939, 73 (H).

manner of speaking Nussbaum's forced abandonment of his career in Nazi Germany, and absorption in the porcelain teeth operations in Palestine, filled in the place of the aging Samuel Bloom, whose personal history of migration was too affected by myriad noneconomic reasons. For both Anti-Semitic hatred and Zionism were central in explaining their moves. And for both the mix of Zionist and managerial ideologies were crucial to the way they handled the production of false teeth. These political and ideological mixtures were partly expressed when the Bloom firm joined, in March 1939, the public protests of Jewish industrialists in America and Palestine against the limitations the British placed on the demographic and economic development of the Jewish community in Palestine.⁶¹

The Impact of War

Samuel Bloom died in Tel Aviv in September 1941 when the German threat of conquering Palestine was turning real. As a prominent industrialist and philanthropist in Tel Aviv the 81-year-old Bloom was buried at the Trumpledor cemetery, beside many political and cultural notables of the Zionist movement. In this he symbolized not only the path from abject poverty in Vilkomir to wealth in Philadelphia and to industrial formation in Tel Aviv but also the maturing influence in Palestine's urban sector of promoters of free enterprise and capitalist culture. It was also a twist of historical irony that it was now, when European Jewry was experiencing the horrors of German rule and Palestine was under a grave danger, that it suddenly experienced an unprecedented economic boom of which the Bloom firm was a part.⁶² Indeed, production in Tel Aviv and Larnaca was now at full steam (see [table 2](#) in the appendix). The war conditions partially paralyzed the production of porcelain teeth, and as neutral Lichtenstein was left as one of their only providers, the demand for the APTC products rose. Moreover, as American and English producers of dental materials faced great difficulties in providing for the warring forces military dentistry turned to an unexpected source of demand for materials kept in factories such as in Tel Aviv and Larnaca. In Palestine itself the Mandate government sought to encourage exports such as polished diamonds and false teeth to replace the downturn in the export

61. *Davar*, "The Artificial Teeth Factory at Nahalat Yitzhak," September 5, 1941 (H); Glass, *From New Zion to Old Zion*, 299–302.

62. *Palestine Post*, "Mr. Samuel Bloom Dead at 81," September 11, 1941; *Davar*, "Rabbi Shmuel Bloom at 80," January 19, 1941 (H).

of oranges, and to get hard currency for maintaining its growing Middle Eastern armies.

The APTC benefitted also from the wartime hunger for false teeth created in India, Siam, and South America, and it seemed a recurrence of similar earlier effects of great political crises and national wars on this industry. The novelty now was, however, in the diversion of false teeth consumption from Europe to South America and South East Asia. This was clearly demonstrated in the almost trebling of artificial teeth exports from Palestine between 1937 and 1944 and it seemed unrelenting. The rise in exports was overshadowed only by Palestine's polished diamonds in 1943–1945, because of the use of diamonds for the war economy and their exchange value in times of economic insecurity.⁶³

The factory's economic success, growing share in Palestine's exports (see [figure 1](#) and [table 3](#) in the appendix), and spread of reputation during the war withstood the growing challenge of the new technology of acrylic false teeth.⁶⁴ Moreover, its economic role during the war brought the Palestine government to intervene directly in labor disputes in the factory so as to prevent it from shutdown, and to take pride in the immense exports of the factory in the 1943 Imperial Exhibition in Cairo. In a similar vein the plant in Larnaca became widely known not only in its contribution to the Cypriot economy⁶⁵ but also in absorbing Jewish refugees from occupied Europe, and later as an employer of Jews exiled from Palestine by the British authorities. No wonder that Robert Nussbaum, the scientific manager of the APTC turned a persona grata in industrial circles in Palestine, in particular among the heads of the Trade and Industry department at the Jewish Agency, the governing institution that prepared the future Jewish sovereignty over Palestine. It elected Nussbaum for the commercial delegation that was purported both to convince the British at the end of their rule to include Palestine in the imperial preference

63. Harry Dawidowitz to Geoffrey Walsh, December 14, 1940, ISA, 66/53-M; *Palestine Post*, "Reflections," September 12, 1941; Leon Bloom to the Chief Secretary of the Government of Palestine, October 23, 1941, ISA, 66/53-M; on the destruction of the industry in Europe see Moshe Benari, Memorandum on the problems of the artificial teeth industry in Israel, August 7, 1953, ISA, 4540/10-G. The wartime rise in exports can be probably related to the contribution of new strategies of marketing, expanding activity of agents, and of the company's international sales organization, but these cannot be substantiated because of the absence of the company's archive.

64. Moshe Benari, Memorandum on the problems of the artificial teeth industry in Israel, August 7, 1953, ISA, 4540/10-G. On the wartime rise of artificial exports see [table 3](#) in the appendix.

65. *Davar*, "American and Israeli Influence in Cyprus," October 6, 1950 (H).

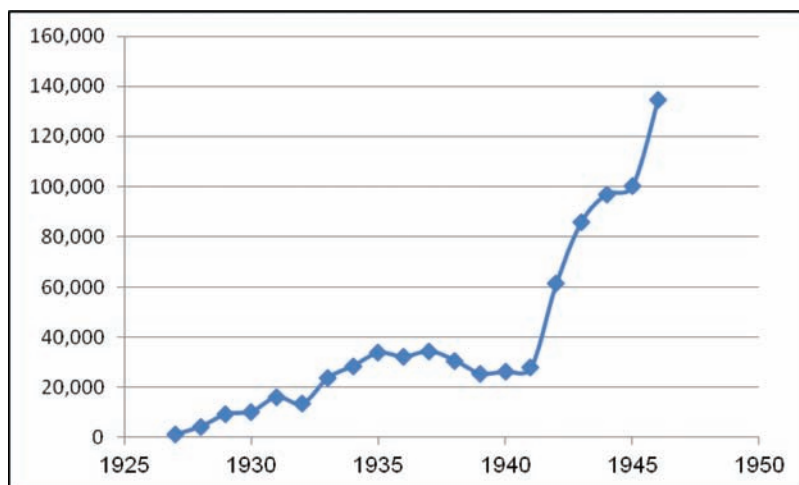


Figure 1 American Porcelain Tooth Co.'s Artificial Teeth Export from Mandate Palestine, 1927–1946 (Palestine Lira). Source: *Palestine Commercial Bulletin*, 10, March 3, 1933; *Palnews*, April 2, 1935; Nachum Tishby to American Porcelain Teeth Co., May 17, 1938, CZA S8/1082; Himadeh, 154, 280; Government of Palestine, 74–75; Ettinger, 375–377.

system, and to maintain ties with the British after Jewish sovereignty would be established.⁶⁶

The impact of the war was however wider, mixing economic expansion with political change at different levels. East European countries, where acrylic teeth were slow to enter, turned in the postwar period into primary marketing destinations for both Palestine and Cyprus, building on the slow entry of acrylic teeth. Moreover, among the first trade agreements between the State of Israel, which was established in 1948, were the exchanges with Czechoslovakia, Yugoslavia, and Poland of porcelain false teeth for wood and textile. Adding to these was steady export of porcelain teeth to South East Asia that reflected expanding ties with countries that were beginning to undergo decolonization. In many ways, therefore, the postwar politics of the Cold War joined with the end of the British Mandate in Palestine and the

66. Leon Bloom to Geoffrey Walsh, December 24, 1940, ISA, 66/53-M; American Porcelain Tooth to the Chief Secretary of the Palestine Government, April 11, 1941, ISA, 66/53-M; Leon Bloom to Chief Secretary of the Palestine Government, June 5, 1941, ISA, 66/53-M; Leon Bloom to the Chief Secretary of the Government of Palestine, October 23, 1941, ISA, 66/53-M; *Davar*, "Colonel Heron in Praise of the Medical Products of Palestine," November 9, 1943 (H); *Davar*, "On Thursday the Economic Mission set for London," April 8, 1945 (H); *Davar*, "The Jewish Commercial Mission Demands in London," July 8, 1945 (H); "Bloom Artificial Teeth Factory," in Olitski, *Sekivot U-Misparim*, 143; Moshe Benari, Memorandum on the problems of the artificial teeth industry in Israel, August 7, 1953, ISA, 4540/10-G.

establishment of Israel in maintaining the firm's power. Politics were however no less influential in bringing about the factory's fall.⁶⁷

Downturn

At the end of 1951 the aggravation of conflict with the workers signaled that the finances of the APTC were deteriorating and that it was soon unable to pay salaries. In early 1952 the factory started to limit production, and in spring 1953 the import of raw materials ceased. Consequently between 1950 and 1954 artificial teeth exports declined dramatically, the porcelain mix left in the factory remained unused, and the number of employees decreased from 400 to 70, respectively (see [figure 2](#) and [table 4](#) in the Appendix).

The Larnaca plant was likewise affected. In the middle of the decade the company announced to the government of Israel that it could not meet its financial obligations, and though its exports temporarily rose in 1956 it was an unsustainable improvement.⁶⁸ The following year the company was transformed into a cooperative under joint ownership of the Bloom family with the holding company of the Israeli labor movement (and a close partner of the current labor government). The APTC did not entirely disappear (re-emerging under new owners in the mid-1960s as Apteco-Dental); but its salience among Israel's exporting industries was drastically reduced. Evidently the local and international resonance that it successfully cultivated since the late nineteenth Philadelphia evaporated.⁶⁹

Explaining the decline gives more weight to the argument of entangled levels of politics presented in the discussion above. At the core of the decline was undoubtedly the emergence of acrylic teeth, a technological change no less dramatic than the changes of the mid-nineteenth century discussed above. In effect the first dental polymer application took place when Goodyear invented vulcanization of rubber. In 1868 the celluloid was invented and was likewise adapted for use in the production of denture base resins. However, only after 1937, when

67. *JTA Jewish News Archive*, "Jews Seek to Leave Cyprus," June 4, 1941; Government of Cyprus, *Cyprus: Statistics of Imports*.

68. Colonial Office correspondence, March 6, 1947, TNA, FO 371/63919; *Maariv*, Aharon Dolev, "Bureaucracy wins the export," June 5, 1953 (H); Moshe Benari to the Department of Health, August 31, 1953, ISA, 4540/10-G; Yoav Nissan, *Davar*, "Workers Volunteer to Sustain an Enterprise," June 27, 1957 (H); Pinchas Lavon to Pinchas Sapir, July 4, 1957, ISA, 6004/3-GL.

69. Deputy of the General Manager of the Trade and Industry Department to the Minister, May 26, 1956, ISA 4540/11-G; Center of Cooperatives to Pinchas Sapir, April 10, 1957, ISA, 6004/3-GL; Pinchas Lavon to Pinchas Sapir, July 4, 1957, ISA, 6004/3-GL; *Davar*, Eliahu Levi, "Americans Eat with Israeli Teeth," November 8, 1966 (H).

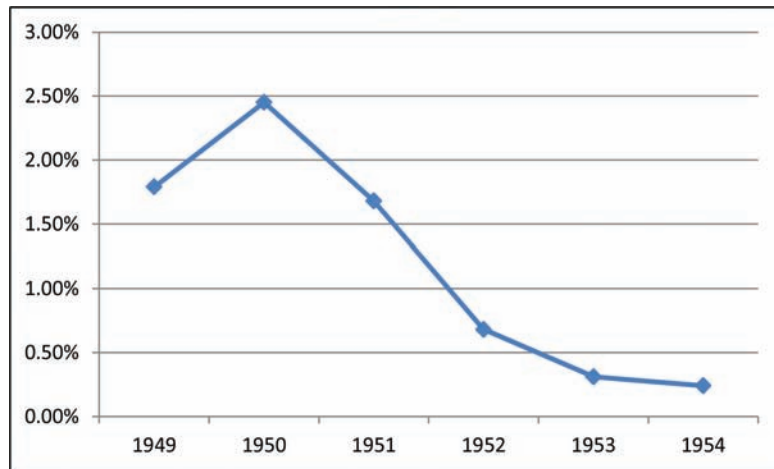


Figure 2 Share of 'American Porcelain Tooth Co.' in Israel's Exports, 1949–1954 (Israeli Lira). Source: Michaeli, 9, 76.

Walter Wright showed that acrylic resins could be a more satisfactory denture base material and thus answer the disadvantages of the use of vulcanite did the industrial production of resin materials for dental applications begin. A few years later the unique properties of acrylic resin were applied industrially in a special hardened plastic tooth line devised by the Henry Justi Company.⁷⁰

The hardened plastic had clear advantages over the porcelain teeth. First and foremost it eased the dependence on raw materials. Secondly, it significantly reduced production costs (in 50 percent on average) because of the automation involved in the production process and its simplification. Finally, the acrylic teeth were sufficiently rigid to withstand distortion under mastication stresses, and their measure of translucency gave the plastic a natural appearance. The alternative these advantages created did not outright exclude porcelain teeth, but gradually overshadowed the porcelain through their aggressive marketing among the dentists and through the cheapening of the product to the consumers.⁷¹

70. Known as synthetic thermoplastic polymer of methyl methacrylate. See Ben Shaffermann to Nachum Tishby, February 11, 1941, CZA S/8 1082; Sweeney, "Denture Base Material"; Peyton, "Physical and Clinical Characteristics"; Osborne, *Acrylic Resins in Dentistry*; Price, "A History of Dental Polymers." On Justi see Rothstein, *History of Dental Laboratories*, 68–76, and, <http://www.americantooth.com/justi/justi.htm>; see also Moshe Benari, Memorandum on the problems of the artificial teeth industry in Israel, August 7, 1953, ISA, 4540/10-G.

71. Moshe Benari, Memorandum on the problems of the artificial teeth industry in Israel, August 7, 1953, ISA, 4540/10-G; Basker and Davenport, *Prosthetic Treatment*; Naveen and Patil, "Bonding Acrylic Teeth."

The emergence of plastic teeth triggered local and international competition. In places such as in the United States, South America, and the United Kingdom where porcelain teeth laboratories and factories opened a parallel line for plastic teeth from start and underwent early adaptation the victory was more easily achieved, leading to specialization in the new products already in the late 1940s. This was true also in Germany where after a long period of boycott and paralysis began the recuperation of its dental industry with acrylic teeth leading the industry. In other artificial teeth-producing countries, such as Mandate Palestine, where local production was more monopolistic than oligopolistic, the process was slower. This is yet again another reason why attention must be paid to power struggles and to the political dimension.⁷²

Importers of acrylic false teeth emerged in Palestine during World War II. They were connected with companies in Philadelphia and London, including H.D. Justi & Son, Inc., the company owned by Henry Justi, and one of the main factors in the progressive victory of acrylic over porcelain teeth. The importers asked the Palestine government to import the cheaper teeth. But they were refused because of the firm support the colonial government gave to any exporting industry (diamonds, porcelain false teeth, etc.) that served the British war economy. Moreover, the refusal was backed by the contribution of the porcelain teeth to the Cypriot economy during the war, and by the long-standing marketing ties of the APTC in Palestine to consumers in Britain itself. The change in government policy came gradually only in 1946–1948, when it was becoming clear that in Britain acrylic teeth were winning the market, in Europe in particular and with the gradual withdrawal of the British from direct intervention in the Palestine economy as a part of the end of the Mandate.⁷³

The managers of APTC for long attuned to the impact of political change on their business, quickly realized the meaning of the emergence of the acrylic revolution. The firm's contacts with the companies ran by the Justi family went way back to Philadelphia, and persisted throughout the 1920s and 1930s. And since the late 1930s Robert Nussbaum, one of the managers of the factory, was himself experimenting with the new materials. However, the company invested much time and energy in safeguarding its monopoly position among government circles, in particular during the boom of the war. And often the struggle entailed the downgrading, in British eyes, of the new technology

72. Memorandums on American Artificial Teeth Industry, October 26, 1948 and February 20, 1949, ISA, 9027/333-G.

73. See correspondence between Benari and the Palestine government and the government of Israel in ISA, 227/34-G.

and the denigration of the competitors.⁷⁴ This was clearly reminiscent of the “patents politics” in Philadelphia a few decades before, where the upholding of property rights over patents were accompanied by fierce legal and personal battles to outdo any challengers. When in 1947 these moves seemed unfruitful, partly because governments in South America and South East Asia were protecting their own industries, the Blooms demanded the government for similar protection. But with the pending withdrawal of the British from Palestine and the spreading domination of acrylic teeth in Europe it was too late.⁷⁵

Similar to the flourishing of porcelain false teeth in the late nineteenth century also now the acrylic transformation could not be stopped. The APTC tried to adapt to the change and open a parallel line of plastic teeth production, but the quality of the products failed in the competition with American and British companies who were already adjusted to the acrylic transition. The APTC, under Nussbaum’s initiative and scientific directorship also turned in 1949 to a new venture with the Palestine Economic Corporation (that earlier supported Bloom’s factory) in the field of resinous chemicals. The company—Serafon—was destined to produce raw materials for Israel’s developing plastic industry. But the venture seemed irrelevant compared to the failing struggle to keep porcelain teeth alive. Moreover, local pressure in recently established Israel to allow imports of acrylic teeth and establish an industry that would finish and re-export them began to bear fruit. Clearly, the battle between porcelain and plastic that would last until the 1950s reflected not only a battle between technologies and markets but also the impact of a political transformation.⁷⁶

The intertwined economic and political change should be understood primarily in the context of the deep impact of the 1948 war on the Israeli economy. No less influential was the disengagement of the sovereign state of Israel from the Sterling bloc that was about to transform the country’s foreign trade relations. Furthermore, rising inflation in the early 1950s aggravated the tension in labor relations. In these contexts the new government of Israel, headed by Mapai labor party, was forced to give in to any proposal that would cheapen production for export, and reduce the respective labor costs. In the case

74. Aharon Becker to the Minister for Treasury, December 8, 1949, ISA, 227/34-G.

75. The American Porcelain Tooth Company to Yosef Serlin the Health Minister, August 28, 1953, ISA, 4540/10-G; American Porcelain Tooth Company to Mr. Brosh at Income Tax, March 11, 1956, ISA, 4540/10-G. The plastic industry emerged in Palestine in 1934 and by 1948 consisted of six factories, none of which cooperated with the Bloom factory.

76. Moshe Benari to David Ben Gurion, September 6, 1949, ISA, 227/34-G; *Palestine Post*, “Modern Factory for Rehovot,” September 26, 1949.

of porcelain false teeth the change coupled the spread of the new acrylic technology with the needs and tribulations of the new state, and with the consequent shaking of the monopolistic status of the company.⁷⁷

Wider political issues were no less significant. As long as demand in Eastern Europe for porcelain false teeth persisted the impact of the opening of the Israeli market to import and re-export of plastic teeth would be weak, and so would be the power of the APTC. And indeed the dependence of the firm on the east European market that started in the mid-1930s and increased after 1945 only deepened now, and for a short time was even encouraged by the new foreign trade accords signed by the government of Israel. However, this economic trade system collapsed dramatically because of the accumulating influence of the politics of the Cold War. Few years after the Soviet Union lent public support in the establishment of the State of Israel the harassment of Jews and Israel's pro-American stances began to block that market. In 1953/1954 the exports of false teeth from Israel to Soviet bloc countries, in particular to Poland and Romania, virtually ceased. The APTC had no alternative markets to balance the collapse.⁷⁸

Moreover, as a reminder of the negative impact of the Imperial Preference system on the opening of the plant in Larnaca two decades before, neither could the company expect much help from the Israeli labor-led government. This became evident by the decision of the government, following procrastinating deliberations in the early 1950s of a special government inquest committee, to give its blessing to the pluralization of the artificial teeth market. The decision led to the formal introduction in Israel of cheaper plastic teeth and in the last instance to the sinking of the APTC and its turning into a cooperative. Clearly, local and international political and ideological considerations that in the past opened and widened the industrial space for porcelain false teeth, now narrowed it down and brought its demise. By this time the world-wide domination of acrylic technology in false teeth production may have been already little challenged. But the timing and nature of its specific explication, and the effects on the performance of the actors involved was nonetheless also politically shaped.⁷⁹

77. Gross, "Israeli Economic Policies."

78. *Palestine Post*, Monty Jacobs, "Teeth for Export," January 11, 1950; Levi Eshkol to the Minister for Trade and Industry, July 17, 1952, ISA, 4540/10-G; See also Bialer, *Between East and West*, 90–92.

79. Minutes of the inquest committee, August 10, 17, and 31, 1953, ISA 4540/10-G; Moshe Benari to the Treasury, July 19, 1955, ISA 4540/10-G; *Maariv*, Y. Shadmi, "(Plastic) Tooth instead of (Porcelain) Tooth," August 6, 1943 (H). Despite the advance of acrylic the more durable teeth porcelain crowns are still used today.

In a wider perspective there was, therefore, no simple hierarchy in the way the various political dimensions intersected in the shaping of the rise and demise of the firm. The transfer of the porcelain false teeth technology from Philadelphia to Palestine and to Cyprus could hardly be explained by branch politics alone, and without the imperial and national forces that punctuated the itineraries of the firm's owners. The impact of local and communal politics in which ethnic and national ideologies played a role was closely intertwined with wider economic considerations. The effects of labor costs on the application and spread of both the porcelain and acrylic could hardly be dissociated from the imperial, national, regional, and local structurations of the employment relations in the industry. And finally, material and immaterial aspects of industrial migration, of communal status and of proximity to political power were mutually influential in weaving together in the company's story the presence of technology, business and the politics of nationality and empire.⁸⁰

Appendices

Table 1 Main export destinations of artificial teeth from Mandate Palestine by American Porcelain Tooth Co., 1932–1933 (Palestine Lira)

Country	1932	1933	Total
United Kingdom	7,557	5,199	12,756
Australia	1,291	2,417	3,708
India	270	983	1,253
Canada	87	1,754	1,841
Czechoslovakia	346	1,199	1,545
Holland	134	852	986
Italy	176	598	774
Sweden	55	2,671	2,726
Other	3,513	7,971	11,484
Total	13,429	23,644	37,073

Source: Raymond Rehavia Feinstein to the Manufacturers' Association in Tel Aviv, March 20, 1934, CZA, S54/318; *Doar Hayom*, December 3, 1934 (H).

80. Pinchas Sapir to Import and Export Coordinator, February 29, 1956, ISA 4540/11-G; Leon Bloom to the workers' committee, March 22, 1957, ISA 4540/11-G.

Table 2 Artificial teeth exports of American Porcelain Tooth Co. and Empire Dental Manufacturing Co. Larnaca from Palestine and Cyprus, 1937–1943 (Palestine Lira = Pounds Sterling)

	Mandate Palestine	Cyprus
1937	34,431	24,666
1938	30,732	25,207
1939	25,505	23,104
1940	26,407	16,089
1941	27,799	12,883
1942	61,379	20,979
1943	85,872	16,843

Sources: Major C.F.R Goulden, Consolidated Records of Statistics on Middle East Industry July 1945. TNA, BT 11/2688; Government of Cyprus.

Table 3 Industrial exports from Mandate Palestine, 1930–1946 (Palestine Lira)

	Mandate Palestine	Artificial teeth	Percentage
1930	365,350	10,325	2.82
1932	312,392	13,429	4.30
1934	294,243	28,585	9.71
1936	417,078	32,200	7.72
1938	639,604	30,732	4.80
1940	1,516,711	26,407	1.74
1942	6,195,606	61,379	0.99
1944	7,347,424	96,856	1.31
1946	27,734,050	134,393	0.48

Note: Excluding re-export from Palestine of products manufactured abroad.

Sources: *Palestine Commercial Bulletin*, 10, March 3, 1933; *Palnews*, April 2, 1935; Nachum Tishby to American Porcelain Teeth Co., May 17, 1938, CZA S8/1082; Himadeh, 154, 280; Government of Palestine, 74–75; Ettinger, 375–377.

Table 4 Share of American Porcelain Tooth Co. in Israel's Exports, 1949–1954 (Israeli Lira)

	Artificial teeth	Percentage of Israel's total exports
1949	182,335	1.79
1950	307,914	2.45
1951	268,353	1.68
1952	103,782	0.68
1953	64,300	0.31
1954	72,093	0.24

Source: Michaeli, 9, 76.

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TMA: Tel Aviv Municipal archive.

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