GLOBAL HISTORY OF CAPITALISM PROJECT

OXFORD CENTRE FOR GLOBAL HISTORY

Case Study #12 **November 2019**

Nestlé's Corporate Reputation and the Long History of Infant Formula

The demand for infant formula in Australia is insatiable. Bare shelves have led supermarkets and chemists to ration sales, limiting the quantity customers can buy in a single transaction. But it's not Australian parents fuelling the formula shortages.[1] A high proportion, between fifty and ninety percent, of all Australian infant formula is exported to China. The situation has created tensions between the two countries. Australian shoppers complain of Chinese *daigou* (personal shoppers) buying formula before it is even stacked on shelves and stripping supermarkets in teams of people. In April 2019, eight people were arrested in Australia for stealing over a million dollars of infant formula in Sydney to sell in China. Two months later, Chinese military personnel were photographed loading boxes of formula onto a Chinese warship before departing Sydney Harbour.[2]

The Chinese market for imported infant formula has remained vast in the decade since 2008 when a tainted formula scandal led to the hospitalization of tens of thousands of babies and health problems for hundreds of thousands more.[3] Several domestic infant formula companies had been selling formula contaminated with melamine – a nitrogen-rich additive which increases apparent protein content of foods but also causes kidney stones and kidney failure. Rumours of an attempted cover-up and delays in recalling the contaminated formula worsened the growing consumer panic. With consumers unsure where in the supply chain melamine entered formula, demand for all domestic dairy products plummeted. China's two million dairy farmers reported pouring away milk and attempting to sell cows in a buyerless market.

The crisis devastated the reputation of domestic infant formula producers. Even conspicuous labelling of new products with 'safety inspection passed' did little to assuage the fears of Chinese parents. Wet-nurses enjoyed a resurgence but the real winners were foreign formula sellers. Those parents who could afford it began importing formula from abroad using a system of personal shoppers known as *daigou.* Others journeyed to Hong Kong, causing severe shortages in infant formula there. Facing a public outcry in Hong Kong, the government passed a regulation prohibiting the unlicensed export of formula. Yet in spite of the new law, powdered milk trafficking has continued and has exacerbated Hong Kong tensions with the mainland.

While the crisis devastated domestic producers, it created opportunities for foreign companies. The Swiss firm, Nestlé, has been particularly successful. The company now enjoys the largest share in China, the world's biggest infant formula market.[4] Targeting parents in cosmopolitan cities like Shanghai and Beijing, Nestlé capitalized on the demand for a trusted foreign brand. Nestlé's Illuma formula routinely features in blog posts and articles about trusted formula products in China. The Hong Kong website boasts of the product's safety guarantees.[5]

Nestlé's shining reputation in China may come as a surprise to readers who remember Nestlé's own formula scandal in the 1970s. In the West today, the media is more likely to deem Nestlé's activities objectionable than laudable, despite the firm being ranked by Forbes as one of the ten most reputable companies in the world in 2013.[6] The roots of the company's lingering bad press can be traced back to the Nestlé boycott of the 1970s. During the boycott, non-governmental organisations and paediatricians accused Nestlé, alongside its competitors, of playing a detrimental role in infant health and nutrition in the developing world.

Case study prepared by Dr Lola Wilhelm. Case study editors: Dr Oenone Kubie and Prof Christopher McKenna, University of Oxford.

NGOs and physicians both impact the reputation building and reputation maintenance of infant formula companies. Despite Nestlé's fraught relationship with both groups since the 1970s, Nestlé's participation in infant nutrition was often welcomed, and even encouraged, by medical and humanitarian professionals from the late nineteenth century until the 1960s. Their collaboration was key to buttressing Nestlé's reputation with the wider public. Recognising the importance of reputation, the firm carefully cultivated relationships with national and colonial governments, scientific and medical communities, and international and non-profit organisations.

At the same time, these relationships were never simple. Medical and public recriminations against the infant formula industry are as old as the formula industry itself. Part of Nestlé's success in infant nutrition for almost a century, however, was the firm's approach to pacifying and managing these criticisms. This case examines the ebb and flow of Nestlé's reputation in infant health and nutrition from the early days of infant formula, through the difficult boycott years, to the present-day reputational challenges Nestlé faces as it expands into the vast infant formula market of China's provincial interior.

Nestlé's Food for Infants lithograph 1897, by Alphonse Mucha. Source: Public Domain

Pure Alpine Swiss Milk

Maternal death, labour demands, and cultural norms have always necessitated some alternative infant feeding methods. Until the nineteenth century, alternative feeding tended to be the exception rather than the rule but with the rise of female employment in industry and changing cultural habits during Europe's and America's industrial revolution, growing numbers of women in Europe and North America abandoned breastfeeding in favour of artificial infant feeding. Artificial feeding consisted of spoon- or bottle-feeding infants, usually using pap mixtures of cereals, sugar, and milk. Wet-nursing was also falling out of grace in the in nineteenth century for its perceived hygienic and moral shortcomings.

Just as more and more women were turning to artificial feeding methods, scientific and medical expertise was progressively supplanting traditional female knowledge in the field of infant feeding – a symptom of the epoch's faith in science as an instrument for the optimal administration of individual bodies and of society alike. The science of nutrition, which was being consolidated in German, French, British and U.S. universities, enshrined cow's milk as the best substitute to breast milk. At the same time however, hygienists and social planners viewed the uncleanliness and adulteration of much of the cheap milk available in European and American cities as a cause of increased infant morbidity and mortality.[7] By the turn of the twentieth century, public health authorities in several Western countries found high infant mortality rates to be due primarily to unsanitary infant feeding practices and to contaminated milk supplies. In some English cities, milk was identified as the vector of tuberculosis and typhoid outbreaks. This realisation made the dairy sector the target of new regulations, through which legislators and local authorities set out to prohibit distillery farms, impose pasteurisation, and create inspection services. Meanwhile, organisations such as the French-born "*Goutte de Lait*" movement ran public campaigns to educate mothers on the safe use of bottle-feeding and organised pasteurised milk depots. With the endorsement of medical professionals, a new range of industrial dairy products, from infant formula to its cheaper alternatives – sweetened condensed milk, skimmed powdered milk, and later evaporated (unsweetened condensed) milk – became popular with doctors, hospitals, and mothers alike, as pure and safe alternatives to fresh milk.[8]

Nestlé epitomised this nineteenth century phenomenon. The firm was founded in Switzerland in 1866, in the midst of these profound changes to infant-feeding practices in the industrial West. Nestlé manufactured a powdered infant-feeding formula based on ground bread and a sweetened condensed milk paste, which from the 1870s was sold under the trademark "Henri Nestlé's Milk Flour" (*Farine lactée Henri Nestlé*). Nestlé's formula followed a recipe developed by the German chemist and nutrition science pioneer Justus von Liebig, Liebig's "soup for infants", which was believed to fulfil the digestive and nutritional needs of babies.

One of Nestlé's main selling points was its use of "pure Alpine Swiss milk" as a token of its products' irreproachable hygiene. The efficacy of this argument with popular audiences was apparent in a news report about Nestlé in 1904: "Although in England breastfeeding is the rule … in addition to breast milk, in 80% of cases, comes 'swiss milk', recommended by the highest and most competent medical authorities, as infinitely superior to fresh milk, even the most pure…"[9]

Advertisement for Nestlé's farine lactée, *Journal de Genève,* 2 November, 1898 Courtesy of the Nestle Corporate Archives

Manufacturers astutely implanted the language of scientific infant feeding in their promotional campaigns, proclaiming that their products complied with the latest nutritional knowledge.[10] Nestlé produced a brochure in 1872 entitled *Mémoire sur la nutrition des enfants en bas âge* written in the academic tone of a scientific article and described by corporate historian Albert Pfiffner as "disguised publicity". *Memoire* warned that "irrational food is one of the main causes of the high mortality of infants". [11] The pamphlet went on to demonstrate how Nestlé's *farine lactée* addressed all the physiological needs of infants, before quoting testimonies from eminent professors who had tested and approved it. Such content was ubiquitous in printed advertisements in the press, in medical journals, and on product packaging.

Part of the marketing strategy thus involved the building of alliances and networks with researchers and physicians. Henri Nestlé, the founder or the firm, was convinced that his best chance of increasing his sales was to concentrate his efforts on doctors and pharmacists.[12] Nestlé's strategy was similar to that adopted by most other formula firms in the nineteenth and early twentieth century.[13] The firm sent salesmen directly to physicians, to supply them with brochures and free samples.[14] The firm also sought to obtain positive testimonies from leading medical experts. Some physicians agreed to prescribe Nestlé products to their patients and to report on the results they observed. Positive reports on these tests were reproduced in adverts published in medical journals and were included, alongside instructions of use, in the information brochures distributed to pharmacists and doctors. Nestlé implemented this competitive strategy in Switzerland and, soon, on the international scale, thanks to its expanding network of sales offices in Europe.

Their strategy appears to have borne fruit. Rave reviews of Nestlé products in medical journals and in the mainstream press circulated and Nestlé's market share rose. Advertisements, such as the one depicted in figure one, relied heavily on Nestlé's strong medical reputation: "Nestlé's farine lactée has been recommended for more than thirty years by the premier medical authorities" the advertisement begins.

Nestlé's corporate success, however only tells part of the history of the infant food industry's early links to medicine. Far from a uniform view, from the 1880s onward, medical researchers and practitioners grew wary of the success of infant formula.

Medical Reservations

American nutrition experts voiced the first reservations. Until the 1910s, there was little consensus among doctors on what constituted the most appropriate substitute for human milk in artificial feeding. In the United States, state-of-the-art guidelines in infant nutrition advocated complex, individually-tailored infant formulas that had to be prepared in milk laboratories or, failing that, at home using mixtures of milk, cereals, and sugar. According to these specialists, industrial formulas, often kept secret, did not meet modern infant nutrition standards. But, although this disapproval of formulas was recorded at medical conventions and in textbooks, outside of academic circles, critics gained little traction. Thankfully for the industry, many physicians ignored the findings of experts, preferring to trust their own, often positive, empirical experience with simple, ready-to-use commercial formulas.[15]

A second blow to the formula industry's reputation in the early decades of the twentieth century was dealt by public health authorities. Around the turn of the twentieth century, doctors and public health authorities tended to view condensed milk and infant formulas as safer baby foods than the fresh milk available in cities. It was not long, however, before doubts were cast on formula's innocuousness. Although rickets, a disease caused by the dietary deficiency of the fat-soluble vitamin D, remained poorly understood until the discovery of that vitamin in the 1930s, empirical observations led nutritionists to suspect that an exclusive diet of skimmed milk led to infant diseases.[16] Despite these growing concerns, infant food manufacturers advertised their respective brands of condensed skimmed milk as infant foods. Nestlé, according to its official history, "reluctantly" followed suit to keep up with a cut-throat competition.[17] Due to its lower price, poor mothers were more likely to feed condensed skimmed milk rather than dedicated infant formula to their babies, leading to widescale malnutrition. In the early twentieth century, public health authorities in several countries launched information campaigns and labelling regulations to discourage the use of condensed skimmed milk as an infant food.[18]

Medical professionals were also concerned by the industry's advertising practices and, in particular, the impact on the commercial practices of physicians. Infant feeding represented a significant proportion of doctors' consultations and incomes. By commercialising ready-made products, complete with preparation instructions, and advertising them directly to mothers, formula manufacturers undermined doctors' livelihoods.[19] This, together with the new concerns regarding the safety and adequacy of manufactured formulas, prompted national medical associations to try and regulate formula advertising. In the 1930s, the American Medical Association (AMA) called for new rules in formula advertising, suggesting for instance that infant formula products should not include instructions of use.[20] Some firms, such as the Mead Johnson company, had already anticipated these demands, and advertised their products almost exclusively to doctors. Others, including Nestlé, accommodated the AMA's demands only partially, and continued to advertise their products directly to mothers, while encouraging parents to seek advice from their physicians.[21] The majority of doctors remained moderate in their criticism of the formula industry: the formula-based infant diets they prescribed were usually successful and bolstered their reputation and clientele. Despite occasional spats, therefore, physicians and the baby-formula industry cohabited relatively peacefully in the nascent infant nutrition economy.

From the mid-nineteenth century until the 1920s, formula companies had invoked nutritional theories as the basis for the elaboration of their formulas and publicised the approval of physicians for their products, thus proclaiming the scientific soundness of their products. However, nutrition scientists and public health authorities had already started to challenge the scientific claims of the industry. In the inter-war period, Nestlé went to great lengths to manage these medical reservations in its home country, Switzerland. It did so by becoming heavily involved in health philanthropy in Switzerland, and by securing the collaboration of Swiss paediatricians for the conduct of clinical trials on new infant-feeding products it was developing. By the 1940s, the firm enjoyed an enviable reputation with Swiss medicine, and was often saluted as a champion of child health and of humanitarian causes. As one Swiss journalist marvelled, "Among the innumerable industries that have emerged worldwide, there is one whose entire activity is marked by the following words: serve the child. Therefore, wherever the food situation of the child becomes worrying, Nestlé stands with its products alongside the Red Cross, in its magnificent crusade for destitute childhood"[22]

But Nestlé also hoped to consolidate its position outside of Europe. In the aftermath of the Second World War, the firm became increasingly interested in penetrating new markets, especially in the developing world.

New Markets

Nestlé had been able to position itself as a partner of infant feeding in the Western world from the mid-nineteenth to the mid-twentieth century. In the decades that followed the Second World War, a new set of circumstances enabled it to do the same in the developing world, and in particular in Africa.

Several circumstances worked in favour of a burgeoning relationship between Nestlé and colonial doctors. In the post-1945 period, as anti-colonial criticism mounted, nutrition became one of the priorities of the new colonial development programmes of France, Britain and Belgium. At the same time, infant nutrition also became an important area of work for several of the recently created, specialised agencies of the United Nations – the Food and Agriculture Organisation (FAO), the World Health Organisation (WHO), and the United Nations International Children's Emergency Fund (UNICEF). The infant nutrition agenda of these organisations was dominated by a new medical preoccupation in the 50s, namely protein malnutrition and its severe form: kwashiorkor.

Kwashiorkor, the native Ghanaian name for the disease, was a childhood condition first described in the 1930s. Researchers thought that it was caused by dietary protein deficiency, and to be particularly likely to occur around the time of weaning, when children transitioned abruptly from breastmilk to the protein-poor diet of the family. Two joint FAO-WHO reports found kwashiorkor to be rampant in Africa and in Latin America.[23] This concern was shared by colonial nutrition researchers: Throughout the 1950s, journals of tropical medicine in Africa were rife with articles on kwashiorkor, its treatment and its prevention, while the UN established the Protein Advisory Group in 1955 to coordinate research and generate policy on the 'protein gap'.[24]

When kwashiorkor was first discussed by FAO and WHO in the early 1950s, the treatments that experts recommended were relatively unsophisticated. They consisted in the "administration of a diet rich in proteins". Powdered skimmed milk was termed the "best therapeutic agent".[25] But paediatricians in African hospitals sometimes had their doubts about skimmed milk, and instead they dabbled with increasingly complex therapeutic protocols. At the paediatric ward of the Dakar central hospital, Jean Sénécal and his team experimented with a "complex mineral therapy associated with nitrogenous reparation", using products that included peanut meal, sardines, raw meat, and also, branded formula donated by firms.

The experts' appetite for alternatives to skimmed milk in the treatment of malnutrition was seen as a great opportunity by Nestlé's directors. Throughout the 1950s, Nestlé medical delegates flocked from Europe to Africa in order to promote Nestlé's products to colonial paediatricians as treatments for malnutrition. One of the most tried and tested methods to convince paediatricians to advise the use of formula to patients was to organise clinical trials, a method which Nestlé had deployed extensively in Switzerland. The scale of their programme is illustrated by numerous mission reports in the Nestlé's historical archives. In 1956, for example, a medical representative from Nestlé embarked on a six-week tour of the French African colonial territories, visited 112 doctors, sixty hospital services, fifty pharmacists, and organised forty clinical experiments, including ten on Pelargon (an acidified milk), nine on Nesmida (a powdered milk enriched with proteins), and seven on Arobon (an anti-diarrheic). Similar programmes took place in Southern Africa, British East Africa, and the Belgian colonies. Dozens of studies were conducted on Nestlé products across Africa in the 1950s.

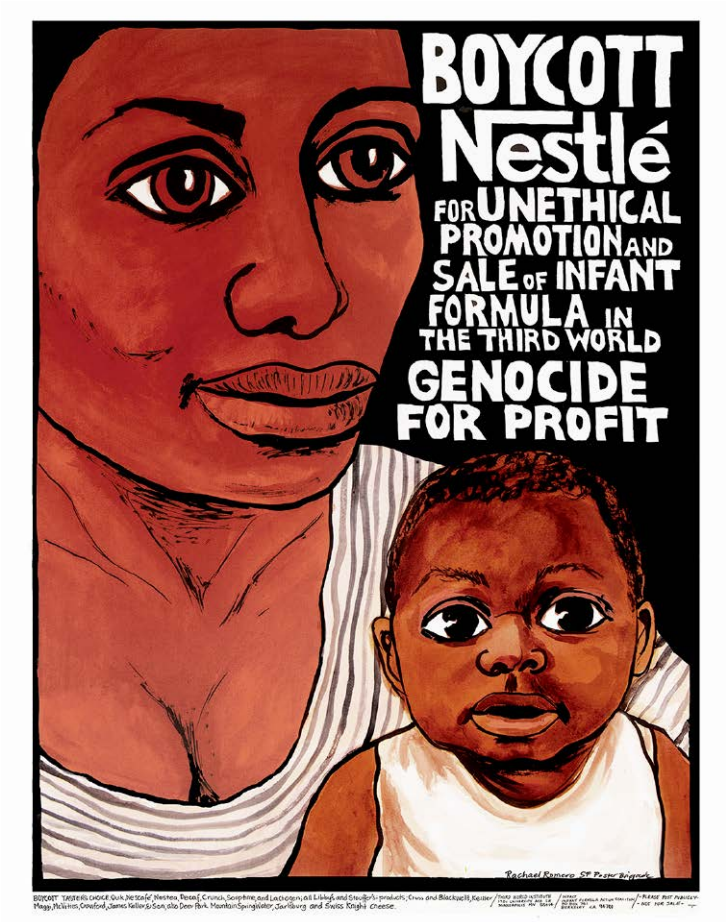
The archives of Nestlé and of colonial health services provide further details on the conduct of these trials. In 1954, paediatrician Jean Sénécal conducted an experiment on forty malnourished children at his paediatric ward at the Dakar hospital, using a stock of Nesmida donated by Nestlé, which was administered by nasal probe. The head of Nestlé's Scientific Documentation Services, based in Switzerland, was invited to see the results for himself during one of his tours of Africa. As he reported, the results were "spectacular". "Under its action, appetite reappears, oedemas melt in five to six days, the biological syndrome improves, hepatic lesions regress, mortality decreases from 80% to 25 %".[26] Or in layman's terms, Nestlé's product was the solution to the African crisis.

Importantly for Nestlé, results of these trials were shared with the colonial medical community, including during inter-African nutrition conferences organised by an inter-imperial association, the Commission for Technical Cooperation in Africa South of the Sahara (CCTA). The CCTA was an imperial "club" comprising Belgium, Britain, France, Portugal, Southern Rhodesia, and the Republic of South Africa. Results were also published in medical journals, in both French and English. For Nestlé's medical delegates, these trials proved important in building the brand's reputation among doctors, especially when

they worked in conjunction with advertising in medical journals. In turn, this strategy would create a "prescription reflex", and in turn this prescription reflex was key to familiarising African mothers with Nestlé products.

Their ongoing strategy produced results in the second half of the 1950s. Nestlé sales reports indicated that sales of all of Nestlé's dietetic products had increased across the African continent. International organisations, on their side, were pleased with these developments. In 1959 a WHO report noted that: "In Africa, the simple fact of having distributed milk has led to profound changes. When mothers get in the habit of receiving and giving the milk, they understand its utility. Today, one can see a market of women buying milk for their children, which was rare a few years ago."[27]

Nestlé thus benefitted from a close relationship with medical professionals, colonial actors, and NGOs in the postwar era. The infant formula manufacturer had successfully represented its product as a central part of the solution for infant health concerns on the African continent. In the 1950s, manufacturers, doctors, and humanitarian organisations agreed that infant formula could be a useful tool in the fight against infant mortality in Africa. But as the twentieth century wore on, Nestlé's relationship to international organisations and the medical community shifted again, contributing to a reputational crisis that rocked the industry.



Cc Rachael Romero, SFPB: for I.N.F.A.C.T, printed by Inkworks

The "Baby Killer"

In March 1974, the British non-profit organisation War on Want published a pamphlet entitled 'The Baby Killer', in reference to the bottle-feeding of infants in the developing world, and thus launched a bleak attack against the formula manufacturing industry. The pamphlet laid out damning charges against the formula industry: "…more and more Third World mothers are turning to artificial foods during the first few months of their babies' lives. In the squalor and poverty of the new cities of Africa, Asia and Latin America the decision is often fatal. The baby food industry stands accused of promoting their products in communities which cannot use them properly; of using advertising, sales girls dressed up in nurses uniforms, give away samples and free gift gimmicks that persuade mothers to give up breast feeding."[28]

Bottle-feeding without access to clean drinking water, sterilised equipment, and refrigeration endangered infants. Furthermore, formula was expensive and parents with limited resources often had to dilute formula to unsafe levels. As lactation diminishes when mothers don't breastfeed, the decision to start infants on formula could not be easily reversed, creating a dependence on infant formula. When formula became inaccessible, parents resorted to feeding their children cheaper alternatives such as corn-starch or whole milk.[30] The results were disastrous for infant health even as formula manufacturers such as Nestlé were promoting their products to mothers as beneficial to their babies' nutrition.

By the late 1960s, medical officials in developing countries had begun reporting a dramatic rise in malnourished infants correlating to a large rise in formula feeding.[31] In the early 1970s, concerned paediatricians persuaded the rebranded Protein-Calorie Advisory Group of the UN, to turn its attention to the potential links between formula promotion and infant malnutrition.[32] Over the next several years, religious, feminist, and Third World advocacy organisations around the world engaged in a series of legal

and public battles against formula manufacturers in an attempt to persuade them to alter their marketing techniques. Dissatisfied with what they viewed as inadequate and cynical responses from the industry, in 1977 U.S. campaigners launched a boycott against the firm Nestlé, which at the time was believed to be the largest supplier of baby formula in the Third World. The Nestlé boycott quickly rose to the stature of a transnational *cause célèbre*, amassing public support in the United States, Britain, and Switzerland. American paediatrician Derrick Jelliffe, a prominent leader of the Nestlé boycott, even coined the phrase "commerciogenic malnutrition", to refer to marketing-induced malnutrition.[33]

Eventually, public pressure persuaded the largest formula manufacturers to adhere to the International Code on the Marketing of Breast-Milk Substitutes, a non-binding set of rules proposed by the World Health Organization and adopted by the 1981 World Health Assembly.[34] Facing intense public pressure, Nestlé created an independent commission which included members of organisations which had championed the boycott and agreed to abide by the Code of Conduct. In 1984, the boycott officially ended, and criticism largely subsided. But critics did not completely disappear. Alleged breaches of the Code of Conduct have resulted in regular calls to boycott Nestlé ever since.[35]

Accounts of the Nestlé boycott have consistently portrayed the campaign against Nestlé as the culmination of decades of medical warnings against baby formula. For instance, boycott campaigners almost invariably referred to a speech penned by colonial doctor Cecily Williams in 1939, entitled "Milk and Murder", in which she argued that "misguided propaganda on infant feeding should be punished as the most criminal form of sedition" (see figure below). Yet this was far from a uniform truth. Ironically, the period before the boycott saw Nestlé's reputation soar as the company worked closely with NGOs and doctors to promote infant health and combat infant protein deficiency. Nestlé's relationship with the medical and humanitarian communities was seldom straightforward and continues to change in the twenty-first century.

"Example of Quality Product"[36]

Following the 2008 Chinese infant formula scandal, Nestlé has quadrupled its share in China's baby milk market, emerging as the clear industry leader.[37] Nestlé's marketing of its formula products, particularly its Illuma brand, has focused on food safety. According to the Hong Kong Illuma website, Illuma formula is made in Ireland where the brand has been recognized as an "Example of Quality Product" from Ireland. The website boasts that "Ireland is ranked no.1 in global food safety performance," and assures parents that Illuma follows Ireland's strict food safety regulations and meets European Union standards. The website also asks customers to read disclaimers and information on the costs (financial and medical) of replacing breastfeeding with bottle-feeding before making any purchases.

However, Nestlé's marketing strategy continues to face criticism. In April 2019, Nestlé came under fire for promoting its Illuma infant formula as "ever closer to lactating secretion" and as "human affinity formula" despite WHO guidelines prohibiting marketing which suggests an equivalence between formula and breastmilk. More concerningly, Nestlé failed to fulfil its commitments to removing sucrose and vanilla compounds from formula products and marketing formula with health claims in American and Asian countries that are not authorised in Europe because of "insufficient scientific evidence."[38]A recent report by the Changing Markets Foundation asserted that "companies like Nestlé have a huge responsibility to provide products that are safe, nutritionally complete and informed by the best available science. Our report confirms that Nestlé continues to use science as merely a marketing tool, valuing higher profit margins over its scientific credibility."[39] And so the NGO criticism continues.

But recent NGO and medical critiques of infant formula have not translated to the general public. A consumer survey commissioned by the CMF found that half of all parents in the UK and Hong Kong trusted the information provided by formula companies. Only 20-30% sought independent nutritional advice.[40] The translation of expertise to consumers is not straightforward, and the public view of infant formula continues to be influenced, but not determined, by the advice of NGOs and scientific experts. Meanwhile, Nestlé continues to expand its market share and reach new customers looking for safe, affordable alternatives to breastmilk.

Endnotes

[1] 'Australia Post opens new 'concept store' that will only ship to China', *The Sydney Morning Herald,* (24 May 2018), accessed online at https://www.smh.com.au/business/companies/australia-post-opens-new-concept-store-that-will-only-ship-to-china-20180524-p4zh8j.html

[2] 'Chinese warships pictured loaded with Australian baby formula before departure', *News.com.au* (11 June, 2019), accessed online at https://www.news.com.au/national/nsw-act/chinese-warships-pictured-loaded-with-australian-baby-formula-before-departure/news-story/934ce3aaf9df90e18a521d6bee1c90c9

[3] 'Chinese figures show fivefold rise in babies sick from contaminated milk', *The Guardian* (2 December 2008), accessed online at https://www.theguardian.com/world/2008/dec/02/china

[4] 'Nestle, rivals vie for big baby formula prize in China's smaller cities', *Reuters* (7 May 2019), accessed online at https://www.reuters.com/article/us-consumer-babyformula-china-insight/nestle-rivals-vie-for-big-baby-formula-prize-in-chinas-smaller-cities-idUSKCN1SD2AO

[5] Webpage 'Illuma: Our Story' accessed online (10 September 2019) at https://www.illuma.com.hk/ireland-example-quality-product

[6] See, e.g., 'Nestlé Makes Billions Bottling Water It Pays Nearly Nothing For', *Bloomburg* (21 September 2017), accessed online at https://www.bloomberg.com/news/features/2017-09-21/nestl-makes-billions-bottling-water-it-pays-nearly-nothing-for; 'The World's Most Reputable Companies, *Forbes* (9 April 2013), accessed online at https://www.forbes.com/sites/jacquelynsmith/2013/04/09/the-worlds-most-reputable-companies-2/#25537d8a5577 .

[7] On this topic, see in particular Peter J. Atkins, "White Poison? The Social Consequences of Milk Consumption, 1850–1930," *Social History of Medicine* 5, no. 2 (August 1, 1992): 207–27.

[8] For seminal works in the history of motherhood and infant feeding, see Anna Davin, "Imperialism and Motherhood," *History Workshop*, no. 5 (1978): 9–65; Rima D. Apple, *Mothers and Medicine: A Social History of Infant Feeding, 1890-1950*, Wisconsin Publications in the History of Science and Medicine, no. 7 (Madison, Wis: University of Wisconsin Press, 1987); Valerie A. Fildes, *Breasts, Bottles, and Babies* (Edinburgh: Edinburgh Univ Pr, 1989); Deborah M. Valenze, *Milk: A Local and Global History* (New Haven: Yale University Press, 2011); E. Melanie DuPuis, *Nature's Perfect Food: How Milk Became America's Drink* (New York: New York University Press, 2002).

[9] Freely translated ("Bien qu'en Angleterre l'allaitement maternel soit de règle, […] au lait maternel vient s'ajouter, dans le 80 pour cent des cas, le « swiss milk», recommandé par les plus hautes et les plus compétentes autorités médicales, comme infiniment supérieur au lait frais, même le plus pur […].") extracted from 'Les industries suisses et les projets Chamberlain', *Journal de Genève* (20th January 1904).

[10] Apple, *Mothers and Medicine*, 68; 77.

[11] Albert Pfiffner, *Henri Nestlé: 1814 - 1890 ; de l'aide-pharmacien au fondateur du leader mondial de la nutrition, de la santé et du bien-être* (Nestlé S.A., 2014), 103.

[12] Pfiffner, 90–92; 95; 103.

[13] Apple, *Mothers and Medicine*, 77.

[14] Apple, *Mothers and Medicine,* 32; R. D. Apple, "'Advertised by Our Loving Friends': The Infant Formula Industry and the Creation of New Pharmaceutical Markets, 1870-1910," *Journal of the History of Medicine and Allied Sciences* 41, no. 1 (January 1986): 16; 20.

[15] See chapter IV in Apple, *Mothers and Medicine*.

[16] Kenneth J. Carpenter, "A Short History of Nutritional Science: Part 2 (1885–1912)," *The Journal of Nutrition* 133, no. 4 (April 1, 2003): 981; Kenneth J. Carpenter, "A Short History of Nutritional Science: Part 3 (1912–1944)," *The Journal of Nutrition* 133, no. 10 (October 1, 2003): 3025; Atkins, "White Poison?," 222.

[17] Jean Heer, *World Events 1866-1966 : The First Hundred Years of Nestlé*, trans. A Braley, G Heath, and Peter Walding (Riviz, Switzerland : Nestlé Alimentana, S.A, 1966), 101.

[18] For the United States, Apple, *Mothers and Medicine*, 134; For Britain, see Atkins, "White Poison?"; Hartog, "The Discovery of Vitamins and Its Impact on the Food Industry: The Issue of Tinned Sweetened Condensed Milk 1890–1940," in *Food and the City in Europe since 1800*, ed. Peter Lummel, Derek J. Oddy, and Peter J. Atkins (Ashgate Publishing, Ltd., 2012), 136–38.

[19] Apple, *Mothers and Medicine,* 88–90.

[20] Apple, *Mothers and Medicine*, 90–92.

[21] Apple, *Mothers and Medicine,* 77; 81; 90.

[22] Freely translated from "Une industrie au service de l'enfant", *Lausanne Hebdo*, 12 May 1944, No 19. Archives Historiques Nestlé, *Comité international de la Croix Rouge*.

[23] J. F. Brock and Marcel Autret, "Kwashiorkor in Africa" (Geneva: Geneva : World Health Organization, 1952), http://apps.who.int/iris/handle/10665/40717; Marcel Autret and Moisés Behar, "Le Syndrome de Polycarence de l'enfance En Amérique Centrale (Kwashiorkor)," *Bulletin of the World Health*

Organization 11, no. 6 (1954): 891–966.
[24] The notion of protein malnutrition and Kwashiorkor endemicity in Africa were partly discredited in the 1970s, when experts started arguing that the group of symptoms usually used to diagnose these conditions (oedema, hair and skin dyspigmentation, reduced immunity, etc.) were in fact often caused by insufficient calorie intake, leading to marasmus, rather than by protein deficiency. See, e.g., Heikens, Manary, "75 years of Kwashiorkor if Africa", *Malawi Med. J.*, 21 (3), 2009.
[25] The fact that huge surpluses of skimmed milk had accumulated in the United States and were being distributed by UNICEF is probably not coincidental.
[26] Freely translated, Letter, 28 March 1956, Nestlé Historical Archives, 11609
[27] "En Afrique, le simple fait d'avoir distribué du lait a entrainé de profonds changements. Lorsque les mères prennent l'habitude de recevoir et de donner du lait, elles en comprennent l'utilité. Aujourd'hui, on peut voir au marché des femmes acheter du lait pour leurs enfants, ce qui était rare il y a quelques années."Freely translated, OMS, Bureau régional de la Méditerranée orientale, " La santé des mères et des enfants dans le monde" 15 December 1959, Archives of the *Institut de Médecine Tropicale du Service de Santé des Armées* (IMTSSA), 2013ZK005-283
[28] Mike Muller, *The Baby Killer: A War on Want Investigation Into the Promotion and Sale of Powdered Baby Milks in the Third World* (War on Want, 1974).
[30] Livia Gershon, 'The Continuing Controversy Over Baby Formula', *JSTOR Daily* accessed online at https://daily.jstor.org/the-continuing-controversy-over-baby-formula/
[31] Gershon, 'The Continuing Controversy'.
[32] James E Post, 'Assessing the Nestlé Boycott: Corporate Accountability and Human Rights', *California Management Review,* 27, no. 2 (Winter 1985): 112-131.
[33] Michael Schwab, "Mechanical Milk: An Essay on the Social History of Infant Formula," Childhood 3, no. 4 (November 1, 1996): 490.
[34] For a recent account of the politics of the Nestlé boycott in the United States, see Tehila Sasson, "Milking the Third World? Humanitarianism, Capitalism, and the Moral Economy of the Nestlé Boycott," *The American Historical Review* 121, no. 4 (October 1, 2016): 1196–1224.
[35] Webpage 'Nestle Boycott News', accessed on 10 September 2019 at http://www.infactcanada.ca/Nestle_Boycott_News.htm
[36] Illuma: Our Story
[37] 'China's Plan to Boost Baby Formula Hits Foreign Suppliers', *Bloomberg* (4 June 2019), accessed online at https://www.bloomberg.com/news/articles/2019-06-04/a2-leads-baby-formula-makers-down-as-china-to-boost-local-output
[38] Webpage 'Changing Markets Foundation: Access To Nutrition Campaign', accessed online on 10 September 2019 at https://changingmarkets.org/portfolio/milking-it/
[39] 'Nestlé breaks pledge to end use of vanilla flavouring in baby formula' *The Guardian* (9 April 2019) accessed online at https://www.theguardian.com/business/2019/apr/09/nestle-breaks-pledge-to-end-use-of-vanilla-flavouring-in-baby-formula
[40] 'Nestlé breaks pledge'

This case-study was supported by a Doc.Mobility fellowship awarded to the author by the Swiss National Science Foundation (Grant No P1GEP1 178031)