Commercial determinants of global health

Abstract:

More than half of the world's 100 largest economies are corporations and an increasing proportion of global deaths are caused by exposure to highly-processed foods, alcohol, tobacco, and air pollution. This chapter explores the full spectrum of commercial activities that impact human health, starting with the historical perspective and moving to consider the various frameworks that have been developed in the past decade to harness and address these commercial determinants. Numerous examples are used to illustrate the actions of industry groups to subvert health-focused policies and foster a narrative that solely blames individuals for harmful levels of consumption. Common industry tactics are dissected and practical rebuttals are presented to tackle ubiquitous arguments. This chapter also redresses the current harm-focused CDOH balance by considering the *positive* direct and indirect impact that commerce and corporations can exert through their operations, closing with a selection of simple rubrics that can be used to conduct quick and nuanced assessments of individual firms. In sum, this chapter introduces readers to the field of CDOH, covers the core concepts with the attending historical, political and philosophical background, and provides the tools required to engage in CDOH research and advocacy.

Keywords:

- Commercial determinants of health
- Corporate determinants of health
- Political economy of health
- Industry
- Tobacco
- Alcohol
- Ultra-processed foods

Contents

Introduction

'Commerce' generally describes the buying and selling of goods and services, often on a large scale - e.g. between countries - and usually for profit. Although commerce has always played a major role in shaping human and environmental health for good and ill, the formalised public health discipline that is concerned with this protean relationship is surprisingly young, less than a decade old,[1] although its roots extend much further back.

This chapter will use the term CDOH to cover both the Commercial and Corporate determinants of health. The latter is often used to specify the role and impact of corporations on human health whereas the former has a wider remit that includes all activity of the private for-profit sector, as well as consumer behaviour, consumerism, individualism, the global risk society, and the political economy of globalisation.

The impact of commercial activity on human health is mediated *directly* and *indirectly*. Positive direct effects from the trade in health-promoting products, technologies, and services are self-evident. For instance, bed-nets, soap, pharmaceuticals, toothpaste, bicycles, toilets, and fruits and vegetables all confer health benefits to the consumer when used correctly. Negative direct effects from buying and consuming products like cigarettes, handguns, and sugar sweetened beverages are also well-established.

Negative *indirect* effects of commerce include the spread of pathogens and diseases along trading routes, environmental degradation, harmful working conditions, gross socioeconomic inequalities, and political lobbying.[2] These familiar 'negative externalities' have to be balanced against positive *indirect* effects such as job-creation, technological innovation, and poverty-alleviation through the creation of wealth.

Addressing the CDOH is a multidisciplinary endeavour because the costs and benefits of commerce are distributed across biomedical, economic, political, and philosophical spheres. China's opening to capitalist markets lifted more people out of poverty than any other event in world history, but also boosted the spread of harmful commodities, inequalities, and apocalyptic levels of pollution. As such, deciding whether Deng Xiaoping's pragmatic series of economic reforms were 'good' or 'bad' depends on the perspective and discipline of the person asking the question. For students of CDOH, the question is *how should* societies weigh health gains and losses against economic and other factors?

To give an example, you may be enjoying this chapter whilst sitting down and consuming an unhealthy snack and/or an alcoholic beverage. How should potential health losses be weighed against your substantial gains in quality of life (or 'utility' in economic terms)? And what role, if any, should the state play in shaping or constraining your choices? After all, your choices today may impact others by raising insurance premiums or straining public health systems. Power, autonomy, and the balancing of competing interests lies at the heart of CDOH.

Commerce, corporations, and capitalism will be treated as neutral instruments for the purpose of this chapter, and the unifying approach is one of harm reduction; a concept that emerged in the 1980s as a response to the failure of abstinence-focused approaches to substance misuse public health interventions. This is because consumption of moderate amounts of 'unhealthy' products like junk food and alcohol is not incompatible with leading a healthy lifestyle and is rarely perceived as socially desirable. It can be difficult not to drift into conceptualising all corporations as homogenous vendors

of social ill when the practices and tactics of big tobacco, big food, big soda, and big alcohol overlap so substantively, however the actual health impact of each individual company varies, being determined by the unique business strategy, operations, employment practices, tax compliance, physical footprint, and political engagement. Rochford and colleagues provide an insightful and nuanced framework for assessing the impact of business on health in this respect.[3]

Starting with the historical context, this chapter will cover the core concepts required to engage with the CDOH before reviewing the state of play with tobacco, alcohol, gambling, and unhealthy foods and beverages. The chapter concludes with a practical overview of common industry tactics and a set of recommended responses.

Historical background

Commercial activity has always been bound up with health and disease. Starting 13,000 years ago, primitive trade interactions between tribes helped to spread ideas, technologies, pathogens, and products. These ranged from harmful medical practices like trepanning to the complex ramifications of the slowly unfolding Neolithic revolution. The spread of agriculture allowed small tribes to grow into large settlements, but also produced socioeconomic inequalities, populations large enough to sustain infectious diseases, and - perversely – malnutrition and an increased risk of starvation when staple crops failed.

Commerce was the progenitor of the birth of 'history' itself 5,400 years ago, in that the earliest examples of writing are Sumerian pre-cuneiform markings made on clay tablets to record trade in foodstuffs like grain and oil. The oldest medical texts appeared 1000 years later in Egypt,[4] Mesopotamia,[5] India,[6] and China,[7] all of which are inextricably bound with the procurement and trade of various herbs, ointments, and other healing preparations.

As trade routes like the Silk Road slowly extended, so did the spread of remedies, opiates, and infectious diseases across the world.[8] [9] It was merchant ships carrying Yessinia pestis that caused the world's first pandemic - the Plague of Justinian (541-542 AD) - as well as the Black Death that claimed the lives of between one third and half of all Europeans 600 years later.[10]

The most significant milestone in the development of globalised trade was the formation of the Dutch East India Company (VOC) in 1602. Besides being probably the best-known early example of a transcontinental corporation and the world's first listed public company, the VOC laid the blueprint for the infamous British East India Company (EIC). As well as expediting the international exchange of people, products, and pathogens, these corporations systematically pillaged and violently subjugated an entire subcontinent, pursuing profit maximisation with devastating ruthlessness. At its zenith, the EIC accounted for half of the world's trade. By its 100th birthday the company was still run by a mere 35 full-time employees in a small London head office, despite commanding a private army larger than those of most contemporary nation-states.

Early chartered trading companies played influential roles in the development of capitalism. Large commercial organisations had previously been run by tight-knit groups of owners, like the Medici family banks or the 53-member Levant Company board. The VOC and EIC were the world's first joint-stock companies, open to any investor. Just like craft guilds, where weavers might come together to collectively pool resources in order to buy cloth, joint-stock companies allowed individuals to pool resources and take a share of risk and reward. However, their share of future profit could be bought

and sold, with share prices varying according to demand. Just as with guilds, shareholders were motivated by the opportunity to generate profit, however, for the first time they did not play an active role in the operation of the enterprise.

The joint-stock model that removed shareholders from the daily running and conduct of the company, combined with a complex and intercontinental supply chain, seems to have added a degree of moral distance:[11] there are reports that news of massacres and bloody conquests were actually welcomed by shareholders as these events inevitably led to higher profits.

The EIC set a high-water mark in terms of the harm to human health that can be caused by systematic pursuit of profits with little to no thought of the human cost. Clearly the EIC represents the extreme end of a very broad spectrum and it should be noted that a great many businesses add to the sum of human health and wellbeing. Rightly or wrongly, most public health engagement with corporations tends to be around mitigating harmful practices rather than harnessing potential 'win-win' situations, or promoting corporate practices that are beneficial to health.

Core concepts in the study of contemporary CDOH

Demerit goods

This term is used by economists to describe goods and services that lead to adverse physical or social consequences for the consumer when used appropriately. Alcohol, tobacco, and ultra-processed foods are all examples of products that harm consumers. Demerit goods tend to be over-consumed when left to market forces and economists generally agree that there is a role for the state to constrain the market in order to maximise welfare.

Negative externalities

An externality is an adverse consequence of economic activity experienced by a party that was not directly involved in the activity (e.g. as a producer or consumer). Negative externalities, such as pollution from factories, are not usually reflected in market prices. Without facing the true social cost of polluting, factories produce more pollution than is socially efficient, leading to a market failure. British economist Arthur Pigou argued that these external costs should be borne by the polluter in the form of a tax.[12] The use of 'specific excise' taxes to correct market failures caused by negative externalities is now widely accepted. For instance, most Organisation for Economic Co-operation and Development (OECD) countries use taxes to reduce polluting car emissions. Around the world, excise taxes are commonly used to correct for the social and economic costs of tobacco and alcohol. The idea isn't new. In *The Wealth of Nations* (1776) the father of modern economics, Adam Smith stated "Sugar, rum, and tobacco are commodities which are nowhere necessaries of life, which are become objects of almost universal consumption, and which are therefore extremely proper subjects of taxation", although he almost certainly didn't have health benefits in mind. Today taxation of unhealthy commodities combines revenue-raising with the intention of bending behaviour away from overconsumption.

Overconsumption of less-healthy foods creates a large burden on society in terms of social and financial costs, losses to economic activity and environmental degradation from unsustainable production practices. These costs are not currently reflected in the price of goods such as ultra-processed foods, which are consumed in vast quantities and are often cheaper than healthy foods.

Social vs individual responsibility for health

There is a dynamic tension between individual sovereignty and the '*health for all'* mission of public health. This is most evident when proposed new public health regulations aimed at reducing harm and addressing inequalities rubs up against personal freedoms e.g. freedom to drive without a seatbelt or smoke in public places. If public health policies were pursued with no other agenda in mind then the world would be very safe, but probably quite boring as well. People enjoy taking some risks (e.g. skiing or trampolining), and many people find that the immediate enjoyment derived from drinking a glass of wine or eating a bar of chocolate outweighs the potential long-term risk to their health. Having offered smoking cessation advice to hundreds of patients in my work as a doctor, I can also confirm that a (relatively small) number of smokers actually do enjoy the experience, are aware of the negative health implications, and choose to continue because they feel that the benefits outweigh the costs. This group is vastly outweighed by the millions who are addicted to tobacco, desperate to stop, and have seen their health damaged by tobacco with terrible knock-on effects for their families and friends.

Public health advocates are commonly painted as spartan ascetics, taking away freedom of choice and fun, and replacing milkshakes with sticks of celery. Some have even argued that "the nanny state's impatient and sometimes self-righteous zeal could do more harm than good", even when it comes to health maximisation.[13] Balancing health against competing values is often a messy process that is shaped by cultural values and social attitudes. In the context of CDOH, the fault-lines arise when governments move to protect health by introducing regulation that constrains the production, sale, marketing, and consumption of unhealthy products. Neoconservatives characteristically baulk at any interference with free markets, and libertarians decry any actions that constrain liberties e.g. freedom of speech through advertising and freedom of choice such as the ability to purchase tobacco or gallon-sized sugar-sweetened beverages.

There are a range of philosophical positions that governments can take when confronted with products that harm consumers, other citizens, and the environment (which also has connotations for human health[14]). The most restrictive would be that proposed by Enlightenment philosopher Thomas Hobbes who believed that rulers have a duty to prevent citizens from harm, including harm to themselves.[15] Critics argue that individuals are much better placed to determine what serves their interests than distant state bureaucrats: "there can be no autonomy if the state, rather than the individual, is the custodian of personal values."[16]

Most governments implicitly adopt the role proposed by the father of utilitarianism, John Stewart Mill who argued that "the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant."[17] This libertarian position is grounded in the early work of John Locke who contended that the sole purpose of government is to protect and enlarge personal freedoms.[18] Locke's concern for protecting natural rights of citizens included protecting individuals from harmful actions of others. Of note, most contemporary medical ethics boards adopt this position in biomedicine: doctors are ethically bound to respect patient autonomy even in the face of unwise personal decisions (as long as the patient has capacity), but practitioners must step in to constrain autonomy and confidentiality if other individuals are placed at risk of serious harm.

The most extreme government position would be to eschew concerns about harm altogether, or relegate these concerns below the priorities of maximising profit and individual freedom. This

approach is undergirded by values of individualism and hedonism, and manifests in the tenements of commercialism, consumerism, and neoliberal unencumbered free-trade. Negative externalities including second-hand-smoke, alcohol-related crime, environmental degradation, and financial strain on public services may be acknowledged as regrettable, but these outcomes do not justify government intervention. In fact, any attempt to interfere with markets or unhealthy choices is seen as egregiously restricting civic liberties.

The ceiling of intervention for each of these positions occupy different rungs on the Nuffield ladder of public health interventions;[19] ranging from restrictive bans and strong disincentives; through nudges, incentives for healthy choices and education; to no action or positive promotion of unhealthy choices. Many governments choose to intercede with firm measures to restrict behaviours that harm other parties (e.g. through taxes, bans, and restrictions on alcohol and drug consumption), but use softer interventions to 'guide choices' for behaviours that mainly harm the consumer themselves (e.g. education around healthy eating).

The lines around acceptable levels of harm to others are blurry. Gambling or eating lots of junk food certainly impacts other people, but indirectly and often after a time lag e.g. through debt/medical bills. There is also no universally 'correct' level of intervention. National and cultural values inform the role of the state and freedoms to harm self and others. By observing global consumption patterns, it is clear that many consumers implicitly agree with Oscar Wilde who advised "everything in moderation, including moderation".

Another important factor is whether individuals bear the financial costs of paying to treat any illness that results from their behaviour. In pure fee-for-service health systems, drinking until you need a new liver does not carry the same degree of 'moral hazard' as similar behaviour within an insurance scheme where other individuals bear a degree of the costs through increased premiums. Governments who run tax-funded national health systems may well be more inclined to take firmer action to prevent addiction and harm from overconsumption of tobacco, alcohol, ultra-processed foods, free sugars, gambling, and firearms for this reason.

Whatever the level of government intervention to influence corporate activity and consumer choices and behaviour, it is important to stress that free choice is not free for those who lack full capacity (i.e. most children). 'Free choice' is also a bogus concept for people who are addicted to certain products (i.e. most consumers of tobacco, many consumers of alcohol, and potentially many consumers of unhealthy foods). We also need to ask if heavy advertising, promotion, tie-ins, product placement, and celebrity endorsements represent the provision of impartial information so that consumers can make informed decisions or frank coercion.

My own view is that companies should be able to produce harmful products and capacitous consumers should be able to engage in harmful behaviours as long as both groups fully bear the negative consequences e.g. by using tobacco tax revenue to cover health and social costs, protect non-smokers, and offset carbon. I would like to see zero consumption of tobacco, but achieved by the least restrictive means. Governments have a role to ensure that consumers are well-informed, and that they do not consume addictive quantities of harmful substances. This echoes St Paul in Corinthians: "I have the right to do anything - but I will not be mastered by anything". I think tobacco should probably remain legal, but be very difficult to obtain – like guns in Japan.[20] This preserves free choice, but ensures that very harmful choices are only ever made deliberately and after careful consideration.

Take a minute to consider your own position. If you were suddenly made health minister would you aim to end smoking altogether (as in the UK[21]); to achieve a predetermined smoking rate (as in China[22]); or eschew targets altogether in order to promote 'personal freedoms'? How do national cultural values shape the balance of civil liberty and public health solidarity where you work?

The fiduciary duty to maximise profit

Earlier we saw how the East India Company separated ownership (shareholders) and management (corporate directors), leading to a perverse incentive to maximise profits with unusually callous disregard for the means employed to generate growth. All forms of commercial or legal relationship where a 'principal' entrusts 'agent' to act on their behalf come with a characteristic set of issues that have been studied and closely regulated since the dawn of civilisation.[23] Laws and moral codes governing the conduct of individuals entrusted with the resources of another feature in Hammurabi's Code,[24] the work of Aristotle,[25] and Confucius's Analects.[26] In the case of the East India Company, shareholders entrusted their financial investment to the corporate managers, just as shareholders do so today.

Any company funded with outside investment assumes what is called 'fiduciary duty'. This term was coined by the Romans to mean 'a person holding the character of a trustee, or a character analogous of a trustee, in respect to the trust and confidence involved in it and the scrupulous good faith and candour which it requires'.[27] There are many instances of where fiduciary duty has been damagingly construed as an ethico-legal obligation to prioritise maximising shareholders return on investment above all other considerations.

In modern times, Milton Friedman has been the most vocal and influential proponent of shareholder primacy and profit maximisation. As the leading figure in the *Chicago school* of neoclassical free-market economists, Friedman believed that corporations could 'undermine the foundations of free society' if they pursued any other primary purpose than "making as much money for their shareholders as possible".[28] This view strongly influenced the politics of Ronald Reagan and Margaret Thatcher in the 1980s. Today, the credos of shareholder primacy and profit maximisation are being challenged, with the Business Roundtable redefining the 'purpose of a corporation' to include a commitment to all stakeholders, having previously endorsed Milton's view that corporations exist principally to serve shareholders in every publication *of principles of corporate governance* issued since 1978. The realignment is a response to – rather than an instigation of – a wider movement away from profit maximisation and towards a more holistic consideration of corporations' social impact. The concept of the 'triple bottom line' - whereby company performance is judged in terms of financial, social, and environmental impact - was first advanced by Spreckley back in 1981 and the climate emergency has made it increasingly difficult for businesses to defend a unidimensional conceptualisation of success based purely on economic returns.

Consumer choice

The WHO-endorsed 'Best Buy' interventions to control non-communicable diseases[29] mainly focus on government and corporate activities, but industry has been influential in bending the narrative towards placing responsibility on consumers for making better choices. From a libertarian perspective, an unencumbered marketplace maximises choice and individual autonomy. Industry groups commonly argue that providing information and education is much less restrictive than using pricing incentives or mandatory reformulation. This focus on providing information and individual

responsibility chimes well with the philosophy of centre-right parties (that currently lead many of the world's democracies).

If all consumers were rational actors (sometimes called 'homo economicus'), having perfect availability of information and the ability to reconcile short term with long term preferences, then this approach would be fine. However, the human condition means that informing people about the potential harms of overconsumption isn't a particularly effective means of influences consumer behaviour. The main evidence for this is the exponential growth in obesity rates, smoking rates and alcohol consumption in the new markets across low- and middle-income countries that lack strong regulatory protections. Homo sapiens have been around for approximately 200,000 years, and for literally 99.999% of that time, the majority of our species has lived in environments where fats and sugars were scarce and daily life involved large amounts of physical activity. Our bodies have adapted perfectly for conditions that no longer exist. We are now surrounded by energy-dense foods and increasingly conduct our lives whilst seated. Evolutionary biology has programmed us to conserve energy and consume excess calories whenever we can. That's why nutrition labelling often makes such a small (but important) difference; little tables of information are inadequate in the face of 200,000 years of evolution.

Humans also tend to discount benefits that accrue in the future and opt for receiving a good thing now rather than a good thing later (so-called 'present-time bias').[30] This is problematic in public health, where many health outcomes only arise after a long time-lag. Doughnuts taste delicious the moment you eat them but the health impacts take a while to manifest, and smoking-related harms occupy a distant future. Even though we understand the consequences ("a moment on the lips, a lifetime on the hips") short term pleasure frequently outweighs future losses. Viz obesity rates in countries with easy access to cheap high-energy density foods. Adolescence is associated with higher future discounting rates (i.e. the risk/benefit calculus is temporarily biased in favour of consumption) [31] and represents a golden opportunity to hook new customers, as evidenced by a leaked memo from Newport cigarettes that admits "The base of our business is the high school student".[32]

People often express a preference for long and healthy lives, and public health intervention can help to reconcile short-term and long-term preferences by aligning short-term behaviour with long-term values and priorities. Regulation is much more effective than voluntary measures and simply providing information when it comes to achieving healthy levels of consumption[33] [34] However we should probably try to resist the vernacular of 'healthy choices' altogether when it is used to pin blame on individuals rather than the wider environment, multibillion dollar marketing campaigns, and addictive products. When 'the supermarket customer has been more extensively researched than any laboratory mouse'[35] we need to remember that often choice is often a mirage.

Engagement and exclusion

One of the enduring debates in public health is whether health can be best served by partnering with corporations that sell unhealthy products, or whether they should be excluded from all policy making decisions. Proponents argue that, as such a large part of the problem in many areas, industry *has* to be part of the solution, and dialogue can result in mutually beneficial win-wins. Critics argue that companies can never meaningfully engage in efforts that constrain their activities or threaten their financial viability.[36]

Taking the industry-engagement approach has perhaps worked best in the UK with the 'public health responsibility deal' bringing together industry representatives, the government, and wider stakeholders with the aim of improving food, alcohol, health at work, and physical activity. The scheme was brokered by a Conservative government and has been widely credited with impressive voluntary reductions in the salt content of many foodstuffs.[37] However, the scheme has also been roundly criticised for delaying effective action in virtually every other arena, as well as ceding control to industry over how numerous public health issues are framed.[38] Nevertheless, other governments have tried to emulate the model. Canada and Portugal have tried to engage industry to voluntarily reduce industrially produced *trans* fats and salt respectively, but the policy targets agreed with industry have been delayed, diluted, or ditched altogether.[39] [40] [41] Pre-empting effective government action by proposing a weaker set of self-regulated standards has become another common tactic that can be deployed by companies in virtually any sector.[42]

Representatives of big food, big soda, big alcohol, and the gambling industry are often permitted a higher degree of engagement than the tobacco and firearms industries. This distinction is based on the idea that processed foods, sugary drinks, alcohol, and gambling can all be enjoyed responsibly and do not necessarily detract from a healthy lifestyle, whereas guns and cigarettes always cause harm when used properly. Tobacco firms are not allowed to advertise their wares at the world cup alongside Budweiser, Coca-Cola, and McDonalds. UN regulations block any involvement of representatives from these industries, and the FCTC[43] frames the approach as 'protecting public health from industry interference'. Is this special status defensible? It is hard to find good scientific evidence to justify the assumption that ultra-processed foods and alcohol are not harmful to health in non-zero quantities, and alcohol and gambling are both highly addictive. There is evidence that complacency with these industries has led to overly lax supply-side global governance policies.[44] [45] Again, think about whether you would meet with industry representatives or exclude them altogether from government policymaking. Given that all companies are unique, what criteria might you apply in order to mitigate risk whilst fostering constructive dialogue and meaningful action?

Power

A common thread that traces through all of the previous sections is an unequal balance of power. Over the past decade, for any given year, the majority of the world's largest 100 economies have been companies rather than countries, and large multinational corporations have consolidated enormous financial, cultural and political heft through branding, marketing, and the influence exerted through their extensive supply chains. The human and financial resources available to firms like Coca-Cola or Pepsi Co. far outweigh those available to health advocates, as evidenced in the coordinated campaign to block a new sugar-sweetened beverage tax in Richmond California where supporters spent US$70,000 vs industry-funded opposition spending of US£2.5 million.

Power relations between governments, consumers, and corporations lie at the heart of the field of CDOH. Again, although most CDOH work has focused on harms, it should be noted that many corporations seek to leverage their resources and position for social good. Sometimes these efforts are genuine, at other times they may be cynical PR exercises or worse, but we must acknowledge that there is a spectrum. Examples of corporations using their resources and expertise to help solve health, social, and environmental problems (as well as enhancing reputation and potentially revenue) include Google's 'project loon' to bring the internet to remote locations, Coca-Cola's initiatives to 'piggyback' oral rehydration solution the last mile, and Unilever's work with WWF to support sustainable fishing

practices and partnerships with Danone and Nestle to promote the Sustainable Agriculture Initiative. Overtly questionable schemes include the Philip Morris International *Foundation for a Smoke-Free World*.

Global health financing is also heavily supported by ex-businessmen like Bill Gates and Michael Bloomberg. Whilst it is fantastic that they have decided to use their wealth to make a positive difference, risks are posed by the combination of enormous influence (the Gates Foundation is a larger global health donor than Germany or France) coupled with a lack of ultimate accountability. The Bill and Melinda Gates Foundation has enormous influence in dictating the global health research agenda and has conducted much absolutely outstanding work, however this is all ultimately directed by one couple and the issues that they decide to focus on.

If there are risks involved when big business and former business leaders spend money trying to improve the world, it is hard to overstate what can happen when transnational corporations use their resources to maximise profit without considering their impact on people or planet. This approach is becoming harder to openly defend, but until individual and institutional investors stop using financial return on investment as the sole criterion for selecting shares, companies will retain a compelling incentive for pursuing perpetual growth.

Power has traditionally been conceptualised as the ability to make someone or something do something it wouldn't otherwise do. McKee and Stuckler[46] note that modern corporate power is frequently yielded in more subtle ways, including shaping preferences and fostering a socio-political environment that only permits innocuous policies. They describe 'visible power' i.e. laws and regulations; 'hidden power' i.e. access to policymakers or standard-setting, and 'invisible power' that can legitimise or delegitimise discourses that promote or threaten company interests. These layers manifest in four different ways:

1. **Defining the dominant narrative.** Companies that profit from the sale and consumption of unhealthy commodities have an interest in suppressing or distracting from information that highlights adverse health effects, and in emphasising individual over social responsibility for health. Power can be exerted through marketing, lobbying, ownership of media outlets, buying scientists to obfuscate the evidence, and social media spending.

2. **Rule setting.** Companies depend on governments to uphold laws and regulations in order to protect their intellectual property, profits, and the integrity of business contracts. Corporations can exert influence and protect their interests by seeking to influence how rules and regulations are set. This extends to international standard setting and guideline development.

3. **Commodifying knowledge.** Companies have advanced an expansive remit for intellectual property rights and now control a wide range of knowledge areas that are vital to human health. Examples include creating dependence on patented agricultural products like genetically modified seeds, and using dominance of various aspects of the drug discovery chain to focus research on medicines that offer marginal benefits to Western consumers rather than medicines for important tropical diseases.

4. **Undermining political, social, and economic rights.** By threatening to move operations overseas, corporations can influence labour rights and weaken collective bargaining. Investor-state dispute resolution procedures commonly weaken attempts to expand universal health coverage.

McKee and Stuckler also argue that transnational corporations have stoked a narrative that the financial crash was an issue of welfare largesse rather than insufficient regulation. Participating in sophisticated tax planning schemes allows corporations to minimise their contributions to the governments that they lobby for greater corporate protections.

McKee and Stucker's paper uses real-life examples to illustrate the different components in their framework. Nevertheless, there is a risk of casting all corporations as belonging to a coordinated and homogenous network of amoral profit-maximisers. Whilst this is clearly not the case, their rubric helpfully illustrates the channels of influence through which power is yielded, and emphasises the fact that much of this activity occurs outside of the public's consciousness. These days the overt military power of the East India Company has been superseded by more imperceptible means of exerting influence over governments, standard setters, and consumers.

The contemporary commercial determinants of health

Despite the lack of armed expansionism, the corporate practices of Google, ExxonMobil, and Walmart have all been compared to those of the EIC.[47] As previously mentioned, the field of CDOH is mainly concerned with documenting, confronting, mitigating, and reversing harms caused to people and planet. The first modern call came from Freudenberg and Galea in 2005, challenging public health professionals to confront industry malpractice with a coordinated and multifaceted response.[48] In many ways public health was fairly late to the party, as social reformers have been calling-out damaging corporate practices for years: think of William Wilberforce, Joseph Rowntree (a socially progressive confectioner), Frances Perkins, campaigns against Nestle's infant formula and Nike's use of sweatshops in the 1970s, and movements against extractive industries in Latin America.

The first time that campaigners within the medical establishment systematically engaged with harmful corporate practices was in countering claims of the tobacco industry, following the research of Richard Doll.[49] Tobacco is the archetypal example of a highly profitable yet deadly commodity that has been globally promoted to the financial benefit of a few and the detriment of millions. The arms-race between big tobacco and public health agencies during the last century foreshadowed ongoing battles and competing narratives around other commodities like sugar, firearms, e-cigarettes, alcohol, gambling products, soft drinks, and *trans* fatty acids.

Reports such as 'Tobacco industry interference with tobacco control' produced by WHO in 2008[50] have helped to expose and elucidate common approaches used across different industries; including funding scientists, producing and promulgating false information, lobbying and funding political campaigns, 'whitewashing' with philanthropy and corporate social responsibility, championing consumer choice and freedom, challenging evidence, and launching legal disputes. In 2010 Capewell and Capewell[51] characterised six features of industry denialism commonly used by the tobacco and processed food industries to undermine scientific evidence of harm:

- Alleging that solid scientific consensus actually represents conspiracy.
- Marshalling plausible-sounding arguments despite logical flaws.
- Using evidence incredibly selectively and ignoring/burying all conflicting facts.
- Demanding absolute perfection of public health advocates e.g. randomised controlled trials (RCT) for passive smoking and cancer.

- Using ‘zany’ arguments to distract attention away from the main issue and use up limited public health resources in refutation.
- Buying experts to undermine good science, or to publish conveniently contradictory findings.

Many of these tactics are outlined in the tobacco industry’s own words, and made available to the public as a result of whistleblowing and legal action. For instance, the WHO-endorsed ‘Action on Smoking and Health: tobacco explained’ report provides a large selection of illustrative quotations from a review of 1,200 internal industry documents ranging from the 1950s – mid-1990s.[52] In 1998 further legal action led to the release of six million internal documents from seven manufacturers.[53]

The term ‘commercial determinants of health’ was introduced in 2012 by Ilona Kickbusch[54] and developed further with Allen and Franz in 2016.[55] Kickbusch defined CDOH as “strategies and approaches used by the private sector to promote products and choices that are detrimental to health”. This expansive definition went beyond that proposed by West and Marteau (“factors that influence health which stem from the profit motive”[56]) in making room for the study of consumer behaviour, consumerism, individualisation and choice, the global risk society, and the political economy of globalisation.

Overview: Four channels through which transnational corporations influence health (Kickbusch et al.):

1) Marketing – to enhance desirability and acceptability of unhealthy commodities.

2) Lobbying – to undermine effective state action to mitigate or prevent harm.

3) Corporate social responsibility schemes – to whitewash company images and deflect attention from harmful practices.

4) Extensive supply chains – which amplify global corporate influence.

1. Marketing

Marketing is not in any way new, with plentiful examples of ‘selling orientation’ (i.e. product-focused) advertising surviving from antiquity.[57] However, it is only in the past century that mass marketing and modern customer-oriented marketing practices have made it possible for companies to develop truly global penetration. Some of the most successful marketing campaigns belong to corporations selling unhealthy commodities – for instance the near ubiquity of Coca-Cola-branded shopfront signs and parasols around the world, the advertised projection linking cigarettes with progressive sophistication, and the presence of McDonalds and KFC in over 118 countries.

There is virtually irrefutable evidence that marketing tobacco and unhealthy foods and drinks to children and adolescents is associated with consumption of these products by increasing desirability and acceptability.[58] However the best evidence that marketing works is the fact that companies invest so much money in this activity. Coca-Cola spends approximately US$4 billion per year on advertising and Nestle spends around US$7.3 billion.[59] [60] In the USA alone, American tobacco firms spend US£1 million per hour on advertising.[61]

The main tools against the marketing and promotion of unhealthy products are high levels of health literacy, targeted educational campaigns, and regulation. Increasing health literacy is the least

restrictive option, and allows populations to weigh information provided by companies against their understanding of the health implications of consumption. Targeted education campaigns, such as Public Health England's multi-billion pound 'Change4Life' campaign seek to influence specific behaviours such as smoking and diets. There is some evidence that health education may be disproportionately utilised by affluent and well-educated groups, thereby exacerbating socioeconomic inequalities, however the standard of evidence is fairly low. Regulation is the most effective means of reducing population exposure to the marketing and promotion of unhealthy products, however it is also the most heavy-handed approach and is often resisted by industry. Regulating unhealthy products tends to resemble an arms-race between industry and state, with manufacturers finding new loopholes or ways to block legislation, or developing new products faster than regulators can keep up, as with e-cigarettes.

A neat example of industry working around incremental public health regulation comes from a French ban on the advertising of alcohol during sporting events (as currently recommended by the WHO).[62] The legislation came into effect just before the 2005 six nations rugby tournament, and prohibited the sponsor of the Welsh rugby team 'SA Brains' from printing their name on the national kit. Instead of using their usual 'Brains' logo on the front of the rugby jerseys, the brewer kept the same font and lettering but changed the word to 'Brawn'. This sidestepped the regulations and was allowed on pitch. Regulators cried foul. In 2009 the firm changed tactics, dropping the typeface and sponsoring the words "Try Essai" instead. Essai means 'try' (the term for a touchdown in rugby), but is pronounced like the brewer initials 'SA'. Again, this clandestine slogan was permitted on the pitch.

Tobacco advertising is prohibited in the 168 countries that are party to the 2003 WHO Framework Convention on Tobacco Control (FCTC)[63] and alcohol advertising is becoming increasingly regulated, however highly-processed food adverts are still omnipresent despite growing attention from the World Health Assembly. There is good evidence that exposure to advertising of unhealthy foods leads to increased consumption of the same.[64] As with many other tobacco and alcohol measures, public health advocates are starting with regulations aimed at protecting children. This approach has worked well for issues like smoking in cars, and health advocates hope that successfully protecting children from junk food advertising will have positive knock-on effects for the rest of the population.

Child-focused initiatives include the campaign by Cancer Research UK to introduce a 9pm television watershed for junk food advertising (that would more than halve children's exposure) and the European Consumer Organisation BEUC call to drop the use of cartoon characters to advertise food products (only 1% are currently used to promote fruit or vegetables). Over 40 public health organisations used the European Commission's revision of the Audiovisual Media Services Directive to lobby for mandatory measures to minimise exposure to marketing; bans on alcohol and junk food product placement and sponsorship; and national sovereignty to limit broadcasts from other countries on health grounds. It is harder to find similar examples of concerted efforts to constrain powerful marketing campaigns in low- and middle-income countries, however this is an essential activity for promoting healthy levels of consumption.

2. Lobbying

In the same way that companies spend vast sums of money on marketing because it works, billions of dollars are spent every year on lobbying lawmakers because this activity helps to ameliorate regulatory obstacles. A number of countries use lobbying registers to monitor who lobbies who and how much is spent, e.g. Canada, Denmark, France, Israel, Lithuania, Taiwan, the UK and the USA

(although the standard varies widely). In the USA, the Senate Office of Public Records publishes quarterly datasets, the most recent shows that there are 1,118 lobbyists representing the tobacco, alcohol, gambling, and food & beverage industries currently lobbying policymakers in Washington, with a combined annual spend of over US$60 million. Furthermore, well over half of these lobbyists formerly held positions in government as regulators or congressional staff. These 'revolving door' positions allow firms to strategically target loopholes in government policy and apply pressure in key areas because they used to be the people designing these policies.

Whilst the Senate Office records do not capture informal payments and other industry lobbying, the record is a good start. In most countries lobbying is a much less transparent process. The European Commission's tax policy department (DG TAXUD) failed to disclose meetings with lobbyists from Philip Morris, British American Tobacco, and Japan International Tobacco whilst the EU was considering revision to the 2011 excise duty tobacco taxes directive. The European Ombudsman denounced this clear breech of Article 5(3) of the WHO Framework Convention on Tobacco Control and called for "more pro-active transparency when meeting with tobacco lobbyists". The Commission actually refused to comply with her recommendation and a follow-up to the official inquiry in 2016 found that FCTC lobbying rules were still not being applied across all European Commission institutions.[65]

Whilst firms may hire lobbying consultants directly or indirectly through industry associations, they often exert influence on policymakers through many different layers. Taking the Scotch Whiskey Association as an example (vocal opponents to alcohol legislation in the EU and domestically): a snapshot in 2010 showed that they were represented on parliamentary groups (Scottish parliament business and exchange cross party groups, the UK all-party beer group, and the European Parliament policy discussion groups), trade associations (Scotch Whiskey Association, Scottish Retail Consortium, the Food & Drink Federation, the Adam Smith Institute, the Snack Food Association, the Global Alcohol Producers Group), class-wide lobby groups (Scottish CBI, the Confederation of British Industry, the European Roundtable of Industrialists, the World Business Council for Sustainable Development), lobby groups (the Scottish Beer and Pub Association, the Portman Group, the European Food Information Council, the International Food Information Council), scientific groups (the British Nutrition Foundation, the Weinberg Group, Landmark Europe, the International Life Sciences Institute, the World Sugar Research Organisation), media-influencing organisations (the Science Media Centre, the Social Issues Research Centre, Drinkaware, European Alcohol and Health Forum) and two think tanks (Scottish Council Foundation, the Adam Smith Institute).[66]

Many industry-backed organisations are designed to look like grass-roots consumer groups. This tactic can play out on a microcosmic scale, like when McDonalds hired 1,000 people to line up overnight ahead of the launch of the quarter pounder in Japan to try and create a buzz, but more importantly this approach is commonly employed on a much larger scale, as with the 'Alliance of Australian Retailers' that was supposed to be an organic coalition of small business owners who opposed the 2010 proposal to introduce plain cigarette packaging and graphic health warnings. It transpired that the group was actually instigated and funded by Philip Morris, British American Tobacco, Imperial Tobacco et al.

In 1985 U.S. Senator Lloyd Bentsen dubbed these fake citizens organisations 'astroturf' groups. Of course, in the Scottish Whiskey Association list, there are also plenty of examples of co-opting scientific (or scientific-sounding) organisations as well. Coca-Cola funds the 'Global Energy Balance Network' that produces research arguing that lack of exercise is much more important than consuming

sugary drinks when it comes to obesity. In 2017 Philip Morris International set up the 'Foundation for a Smoke Free World' with an annual budget of US$80 million. It is difficult to see how an organisation entirely funded by a highly profitable company that makes most of its money selling tobacco can be anything other than a very well-funded PR influencing body.

The level of subterfuge with industry-backed lobbying groups varies widely. In March 2018 it emerged that five alcohol companies helped to fund – and potentially shape the design of – a large RCT overseen by the US-government-run National Institute on Alcohol Abuse and Alcoholism. Two thirds of the US$100 million, 7,800 person RCT has been funded by Anheuser Busch InBev, Carlsberg, Diageo, Heineken, and Pernod Ricard, however their involvement is not disclosed on the clinical trials registry. The trial sets out to establish whether moderate drinking is beneficial to health. (Spoiler alert, it isn't[67]). There are plentiful other examples of companies and industry associations funding bogus or biased studies to cast doubt on the effectiveness of public health action and to distract from the main concern.[68]

In many countries, lobbying takes the form of frank bribery and corruption. Revelations around SA Odebrecht showed just how integral bribery is for day-to-day operations in many countries. The construction firm even had its own bribery division; the 'Division of Structured Operations'. In 2010 the US Securities and Exchange Commission charged two tobacco firms for a coordinated scheme to bribe Thai public officials under the name of 'Alliance One International Inc'. The firms paid around US$1.2 million in bribes to secure over US$18 million of sales contracts to the government-owned Thailand Tobacco Monopoly (TTM). In another case, Anheuser-Busch InBev was charged under the Foreign Corrupt Practices Act for what the companied called "taking care of" Indian public officials in order to boost beer sales, and threatening to silence a whistle-blower. And British American Tobacco paid a wide range of public officials across the African continent to stifle competition. The complex scheme also involved East African Breweries Limited, whose personnel were used to pay bribes to senior Kenyan officials.

Bribery is an inescapable part of everyday life for millions of individuals around the world, so it should come as no surprise that it is also part of 'business as usual' for large corporations. But using enormous economic clout to undermine public health regulations like the FCTC, as routinely attempted by the tobacco industry,[69] puts millions of lives at risk and is very hard to counter. Even when it comes to perfectly legal lobbying, transnational corporations command economic resources several orders of magnitude greater than those of public health advocates. A recent analysis of corporate finances in the processed food, tobacco, alcohol, and fast-food industries showed that the top 33 publicly-listed companies in these sectors made combined sales of US$829 billion in 2017 with profits of US$99 billion.[70] With tobacco, food, and alcohol sectors becoming increasingly consolidated and controlling massive economic reserves, their efforts to subvert, undermine, and reverse public health regulations are becoming increasingly powerful. In 2003 the sugar industry managed to completely derail an important WHO recommendation by lobbying the US government. WHO had released a report that recommended limiting free sugar intake to <10% of daily energy. A spooked sugar industry lobbied the US health department to challenge the recommendation and withdraw funding from WHO. The Department of Health and Human Services duly produced a critical appraisal of the WHO report and there followed a coordinated effort to weaken the proposed WHO strategy which was ultimately successful: the 2004 World Health Assembly adopted a strategy document on diet, physical activity, and health that contained no proposals or even reference to reducing free sugar intake.[71] A *New York*

Times editorial by Kelly Brownell and Marion Nestle decried the US health department's behaviour as "blatant pandering to American food companies that produce much of the world's high-calorie, high-profit sodas and snacks."

Some final examples illustrate how companies use their heft to open up new markets and challenge national sovereignty in the name of trade liberalisation. Trade liberalisation reduces import and export tarrifs and makes it easier for transnational companies to produce and advertise their products.[72] [73] Lopez et al found a statistically significant association between reductions in trade tariffs and imports (and sales) or sugar-sweetened beverages.[74] Samoa opening to trade liberalisation is the standard case-study: in order to join the World Trade Organisation it was forced to rescind trade barriers to unhealthy products like fatty turkey tails. As a result of reducing import tariffs, export taxes, and import substitution policies, Samoa has opened up to cheap junk food and become the world's most obese country.

Other high-profile examples of industry challenging national sovereignty to protect health include challenges to new tobacco legislation in Australia and Uruguay,[75] and the Finnish Food and Drinks Industries Federation blocking a planned tax increase after filing a complaint with the European Commission focused on the grounds of state aid.[76] Contesting these (often baseless) challenges consumes large amounts of time and money. The American Beverage Association, Coca-Cola and Pepsi collectively spent US$60 million on lobbying from 2009-2010 which included petitioning states to limit the regulatory authority of local governments and overwhelming local public health departments with detailed freedom-of-information requests.

Industry action on this scale and can lead to 'regulatory chill' – where the mere risk/threat of costly legal action under investor state dispute settlements stops other governments from considering or introducing regulation that constrains consumption of unhealthy commodities.[77]

3. Corporate social responsibility schemes

Corporate social responsibility is a way of 'giving back' to communities and offsetting damage caused by core activities. Every year, for-profit enterprises spend billions of dollars on social and ecological causes. In many instances, companies use foundations in order to try and insulate charitable giving from the interests of the firm. Others use charitable spending more tactically to try and increase influence, distract consumers from the harm caused by elements of the business, or associate themselves with good causes. In this way CSR spending can be used for tax-deductible public relations and marketing.[78]

Tobacco advertising and sponsorship has been significantly curtailed by the FCTC but big food and big alcohol remain free to promote themselves in most jurisdictions. Both industries work incredibly hard to associate themselves with sport and activity. Coca-Cola has sponsored the Olympics since 1928 and the FIFA world cup since the 1970s. The 2016 world cup was sponsored by Coca-Cola, Budweiser and McDonalds and the 2020 Olympics is sponsored by Coca-Cola, Asahi, and the processed food manufacturer Marudia. During the 2014 Tour de France the confectionary manufacturer Harribo gave out 60,000 packets of free sweets.

Spending money on social and environmental projects can help to distract attention away from the harm caused by a given industry's core activities e.g. selling sugar-sweetened beverages in a country with a huge obesity problem. Often the projects or activities funded help to shape a narrative that absolves the company of blame. For instance, big food and big soda companies often sponsor sporting

events, playgrounds, and local exercise infrastructure projects. This burnishes corporate reputation, gets the brand name out, associates the brand with healthy people having fun, and – critically – supports a narrative that places the emphasis on individual responsibility and physical activity as the main means of maintaining a healthy weight.

In the case of the tobacco industry, many of the big players have signed pledges and set up foundations with the purported aim of eliminating smoking. This keeps the industry round the table by showing willing, despite the fact that ceasing operations would be a much faster, cheaper, and more effective means of achieving a smoke-free world.

4. Supply chains

The tobacco, alcohol, and fast-food sectors are incredibly consolidated with a small number of transnational corporations accounting for a large proportion of total sales, and generating enormous wealth.[79] As mentioned above, many companies rank alongside countries in terms of their annual revenue: for instance Walmart ranks as the world's 24th largest economy, above Norway, the UAE, Honk Kong, Israel, and South Africa. These huge transnationals have extensive supply chains that extend all around the world, collectively employing millions of people and supporting myriad local economies. To try and get a sense of the scale of these operations, consider the fact that Coca-Cola uses three million tonnes of plastic each year (roughly equivalent to 15,000 blue whales), and Nestle works with over 700,000 farmers and sources around 477,000 tonnes of soya annually.

In diversified economies, the operations of any given sector are of less importance than economies that are dominated by a small number of industries, for instance oil production in the gulf states. Just as Muhammad bin Salman has been attempting to wean Saudi Arabia off oil, it is important that countries highly dependent on tobacco, sugar, and cocoa production are able to reduce their dependence on these industries. According to national documents, sugar exports represent 9% of Swaziland's GDP; cocoa represents 16% of Côte de Ivoire's GDP; and tobacco represents over 5% of GDP for Zimbabwe and Malawi. Tobacco is such a strategic element in Zimbabwe's economy that the government has actively promoted the tobacco industry and repeatedly sought to weaken the FCTC.[80]

It is not easy to hedge against extensive supply chains. Anti-competition laws may seek to break up monopolies, but in reality this is tool is not wielded by public health. Protecting and insulating legislators from the influence of major domestic employers and documenting evidence of the benefits and harms of industry are more common approaches. As Supreme Court associate justice Louis Brandeis said; 'sunlight is the best disinfectant'. Acting as sunlight means documenting and exposing business practices, consumption rates, and emerging epidemiological changes. Modelling and observational studies can generate evidence that can be used to hold companies to account and shape public policy decisions.

Affordability, Accessibility, and Cultural Acceptability of unhealthy commodities

The four aforementioned 'supply-side' factors are only one side of the equation. Whilst acknowledging the role that marketing plays in demand-creation, unhealthy products cannot be purchased unless there is genuine demand and an ability to pay for products from consumers. In considering the spread of non-communicable diseases and their commercial vectors e.g. cigarettes, sugar-sweetened beverages, and highly processed foods, it can be helpful to consider 1) affordability, 2) accessibility and 3) cultural acceptability as prerequisite conditions for spread and consumption. For instance, liver

cirrhosis rates are low in populations where alcohol is prohibitively expensive (e.g. Iceland), unavailable (e.g. Sudan), or culturally taboo (e.g. Iran). The same is true for smoking and lung cancer e.g. rates are low in New Zealand where tobacco is very expensive and in Bhutan where tobacco is unavailable.

Government initiatives to stem the sale of these commercial vectors of disease fall into the same categories: pricing measures seek to make products unaffordable; regulation and licencing restricts the 'when', 'where', and 'who' of sale and consumption; and education, counselling, and mass media campaigns aim to make citizens more aware of harms.

These three factors are situated in a broader national context. Macroeconomic conditions influence household disposable income and workforce costs. Climate and geography can impede transport and cold-chains which also influence costs (and therefore prices). Government corruption and competency has a major bearing on the ease of doing business, along with broader political volatility and social unrest. National values, culture, religion, and history shape attitudes towards smoking, alcohol, diet, and body image.

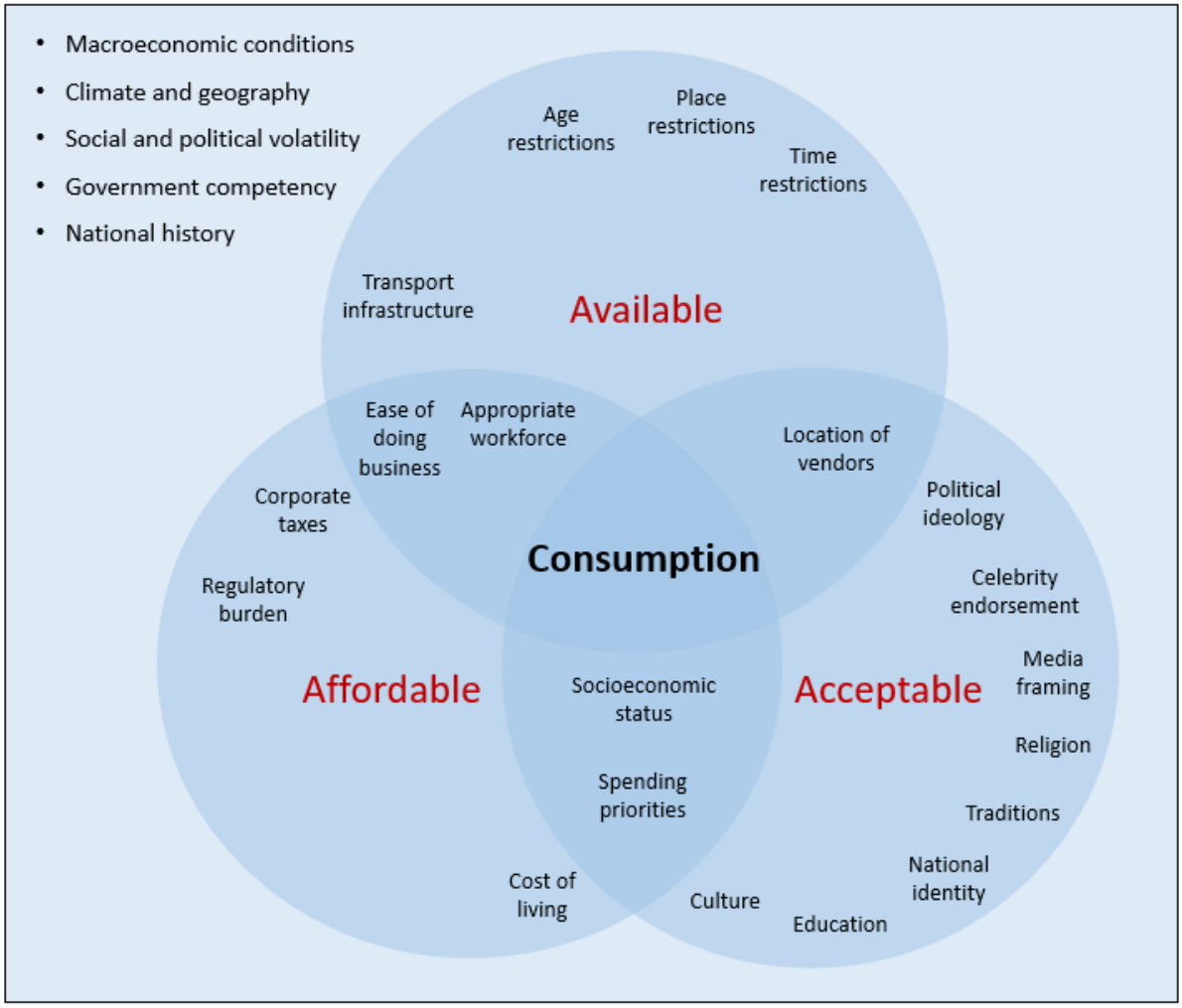

Figure 1: The three conditions required for consumption of unhealthy commodities.

Responding to common industry arguments and framing tactics

When it comes to protecting the public's health from harmful products and practices, we often know which interventions work but the issue is convincing governments to implement them. Whilst health advocates vie for greater regulation of harmful practices, companies that stand to lose market share or revenue have a stake in lobbying for inaction, dilution, or reversal of effective measures. Evidence suggests that the way that proposals for new public health interventions are portrayed or framed influence the chances of success.[81]

Framing: the "conscious and strategic effort by groups of people to fashion shared understandings of the world and of themselves that legitimize and motivate collective action".[82]

Taking health-related food and beverage taxes as an example, the *story* that accompanies a mooted tax, along with the portrayal of the problem and solution, are part of the frame. For example, the Finnish food tax has been presented to the public primarily as a means of raising revenue, whereas the Mexican sugar-sweetened beverage tax was framed in terms of addressing a national diabetes and obesity epidemic. To be effective, framing must be credible (people perceive it to be truthful), salient (the issue matters to them) and must take account of differing views and cultural values.[83] Negative framing commonly receives less support than positive framing for the same issue.

Returning to the example of the 2014 sugar-sweetened beverage taxes in California, the measures were strongly resisted by industry groups who framed the proposed tax as unjust and regressive; disproportionately hurting hard-working, low-income Americans. Although residents of Berkeley voted in favour of the tax, over 30 other cities and states in the USA have rejected similar measures. Industry groups have outspent tax supporters by a factor of 18, with 99% of funds provided from corporate interests from elsewhere in America. This money was used to fund radio, TV, and subway adverts, billboards, and house-to-house canvassing.[84]

There are a common set of arguments and framing narratives that different industry groups tend to marshal in order to refute or discount public health proposals. Whilst some may have merit, others distort the truth or aim to distract from the issue at hand. Continuing with the example of health-related food taxes, the following section takes 12 common criticisms in turn and provides potential counterpoints.

1. "Why not promote physical activity instead?"

Because whilst increased physical activity is essential in the fight against obesity it should be seen as a complement to promoting healthier diets rather than as a substitute.

- Physical activity may not be closely associated with other health outcomes of interest, such as dental caries.
- In obesity, the role of physical activity is relatively small compared to the role of diet.
- Physical activity accounts for a much smaller population attributable risk fraction than diet in the global burden of disease (diet causes 10x more DALYs[85]).
- Multiple measures are needed to combat obesity and NCDs.
- Taxes may be more likely to benefit low-income groups than measures aimed at increasing activity.
- Taxes generate revenue and have an impact on entire populations whereas physical activity interventions cost money and only tend to impact targeted groups.
- Tax revenue can be used to fund physical activity interventions.
- Physical activity interventions generally do not address the negative externalities associated with unhealthy eating.

2. "Why not promote nutrition education instead?"

Education is an indispensable tool in improving population health and should be fully supported.

- Education and taxes are complementary, not mutually exclusive. Multiple measures are needed to combat obesity and NCDs.
- Education measures may disproportionality benefit high-income groups and widen socioeconomic health inequalities.[86]
- Education schemes are expensive whereas taxes pay for themselves and generate revenue that can be spent on other measures.
- Education does not address the negative externalities associated with unhealthy eating.

3. "It's their own fault for overindulging, so don't punish moderate consumers"

Those who manage to maintain a healthy weight or drink responsibly may feel unfairly penalized by price-related measures, despite the fact that responsibility for health does not rest solely with individuals.[87]

- Responsibility for health is shared between individuals and society.
- Food systems and powerful marketing campaigns tend to promote overconsumption.
- Less-healthy products are often less expensive than nutritious food.

- Simply telling people to eat better or drink less does not work very well.
- Taxes on less-healthy products will be borne by those who consume the most; those who consume in moderation are likely to face negligible increases to their food/alcohol budget.

4. "This is the nanny state going too far"

Economic and political libertarians resist any form of state interference that confines personal choice (often branded as the "nanny state"). However, there are good economic and libertarian reasons to tax less-healthy foods and drinks.

- Overconsumption results in market inefficiencies and negative externalities.
- Taxes can promote alignment of behaviour with long-term preferences.
- People generally express the wish to consume in moderation and lead a healthy lifestyle but cannot manage in the current environment.
- Taxes do not restrict choices; they make unhealthy choices more expensive.
- The overall income impact of these taxes is low but the potential health gains can be large.
- There are similarities with tobacco taxes and these are now generally well supported.
- In many settings, health-related taxes have public support.
- In many settings the public has come around to supporting taxes once they have been introduced even if they were initially opposed – replicating the experience of many nations with seatbelts and smoking restrictions.

5. "Self-regulation is superior"

Voluntary actions should be applauded and should continue alongside regulatory measures. Opponents may advocate dropping the tax and promoting self-regulation instead.

- Taxes and industry self-regulation are not mutually exclusive.
- High rates of diet-related death and disease shows that self-regulation is not working well enough. We need to take urgent and effective action.
- Research supports what common sense suggests; while industry self-regulation can lead to reductions in consumption it is much less effective than binding regulation.
- An ultimatum could be issued: if industry can reach the targets set through voluntary action there may be no need to introduce a tax. This approach commonly backfires when politicians default on their threats, as was the case with *trans* fat reformulation in Canada.

6. "The mooted health-related tax is regressive"

This statement takes a very narrow view of equity.

- The impact on low-income households is mediated by the entire tax and welfare system and not by an individual tax. The consumption of unhealthy foods and beverages in itself is already regressive, but the tax and price increases are likely to change behaviour more among low-income groups than high-income groups, with potentially higher health gains (and associated financial savings) for low-income groups.
- Low-income consumers bear the greatest health burden caused by unhealthy diets and therefore have the most to gain from any attendant reductions in consumption.
- Alternative policy options such as education and labelling may disproportionately benefit highly-educated and high-income groups, thereby exacerbating socioeconomic health inequalities. These approaches are also less effective at influencing behaviour.
- Increased revenues allow for progressive government spending.
- Hypothecated health and welfare spending can be focused on low-income groups to counteract the impact.
- Pricing measures have consistently been found to be more effective than policies that focus education or enhanced provision of consumer information. The issue of obesity demands that we use the most effective tools available to us.

7. "Taxes will have a limited impact on health and revenue"

This depends on how the tax is designed and administered. It is also a matter of perspective.

- Many taxes from other countries have been levied at either too low a rate to make a significant difference to consumption or for too short a time to make a sizeable health impact.
- A single tax may not solve a given health problem independently but it can make a valuable contribution.
- Food taxes should form part of a broad package of dietary interventions.
- Denouncing taxes on the basis of short-term impact data is common, and policy-makers need to be clear from the outset about the indicators they will use to gauge success.
- Poor diet has become the leading risk factor for death and disability. We should be doing everything we can to help people to eat healthily.

8. "Taxes will damage employment and the wider economy"

Industry opponents may claim that reduced sales of taxed goods lead to unemployment in the sector and weaken the whole economy.

- To date no scientific peer-reviewed evaluation has shown that food taxes damage employment, the agri-food sector or the wider economy.
- The scientific peer-reviewed evidence on health-related food taxes and employment suggests that the introduction of taxes is associated with a net increase in total jobs.
- Because the food market is dominated by such a small number of producers with broad product portfolios, workers can move from the production of unhealthy products to the production of healthy ones as demand changes.
- Even when jobs cannot be maintained within the agri-food sector, there is evidence that taxes lead to an overall increase in the number of jobs in the economy.
- Other factors such as the overall state of the economy, consumer preferences and seasonality have much larger effects on industry indicators.
- There has been no evidence of significant sustained effects on competitiveness in the European countries that have introduced taxes.
- Claims that taxes damage the wider economy is myopic. Money not spent on less-healthy food does not leave the economy – it is spent on other goods and services.

9. "Taxes discourage voluntary reformulation"

This completely depends on the type of tax used. Specific excise taxes levied by weight, size or volume offer little incentive to reduce specific nutrients. Taxes targeted at nutrients or involving nutrient profiling primarily operate by exerting pressure to reformulate.

- Taxes targeting specific nutrients and involving nutrient profiling powerfully incentivize reformulation.
- If the proposed tax is a specific excise tax that does not intrinsically discourage reformulation, then there is nothing to stop the government from providing separate incentives to reformulate.

10. "There is no evidence that taxes work"

There is good evidence from modelling, observational, and experimental studies to demonstrate that taxes on sugar-sweetened beverages reduce consumption. There is weaker evidence for other forms

of health-related food tax because fewer countries use them, however they seem to work and there is currently no evidence to suggest that they are not effective.

- Price is a powerful lever and taxes have a firm economic rationale.
- Taxes on foods and beverages have been implemented in a number of countries and also at local level. Evidence indicates that consumers respond to price incentives.
- Many new taxes and policies are launched on the basis of political ideology or to raise revenue. Clearly framing the potential health benefits, in particular for low income groups who are most responsive to price incentives can provide a powerful narrative.
- Recruiting high-profile academics, politicians and celebrities to support the efficacy of food taxes can help to mitigate the impact of countering claims from credible opponents.

11. "Taxes are less effective than changing whole diets"

Food taxes tend to focus on specific foods or nutrients. Unhealthy diets cause illness and very few foods are intrinsically unhealthy when consumed in moderation (unlike tobacco). Food taxes based on nutrient profiling can potentially influence diet as a whole; however, most current and postulated taxes focus on single products or nutrients.

- Current measures to improve diet are not doing enough to control health problems.
- One tax cannot change the population's diet. However, taxes can make a valuable contribution in combination with complementary measures such as education, subsidies for healthy foods, advertising restrictions etc.
- Food taxes are helpful for shifting consumption patterns away from the least-healthy foods.

Moving towards constructive dialogue

This chapter reads as a polemic against big business because, to date, virtually all CDOH research and activity has focused on addressing egregious or highly impactful harmful practices of industries whose sole raison d'être is selling highly profitable and highly damaging products that play a large role in the unfurling NCD pandemic. As I emphasised at the very beginning of this chapter, there are many millions of businesses whose core operations, ethos, and products are beneficial to human and environmental health. The discipline of CDOH has evolved from the battle against the tobacco industry and has continued addressing the same set of tactics as they have arisen with companies selling alcohol and junk foods. The next phase of CDOH must augment the current, overwhelmingly

adversarial relationship with business with a more nuanced appreciation for the role of businesses in human health.

Rochford and colleagues have proposed a framework that moves towards accommodating nuance and complexity in assessing where a business's health impact lies on a spectrum from positive to negative. There framework considers the *nature* of a given business entity (scale, sector, and employee position), its *internal processes* (employee relations and physical infrastructure) and *external processes* (products/services, marketing and advertising, supply chain management, lobbying, political donations, corporate citizenship, and participation in standard setting and funding research). At the time of writing this particular approach is yet to be applied, however the explicit acknowledgement that businesses can have a neutral or positive impact is an important next step for those involved in addressing commercial determinants.

A further step would be assessing the mixed impacts of individual corporations – for instance Coca-Cola (virtually a cartoon villain in many public health circles) works with Oxfam to improve land rights for farmers, employs thousands of people and supports many more jobs in the global economy, pays billions of dollars-worth of tax that support public services, promotes community- and international-level sporting participation, and holds an extensive portfolio of products, including fruit smoothies and bottled water. If Coke disappeared tomorrow, human health would probably benefit, but the impact of the corporation is not solely negative. Constructive dialogue between the company and public health workers would seek to mitigate harms whilst amplifying opportunities to improve.

Virtually *all* business models include opportunities and challenges for human health, especially when a broad view is taken that includes social, economic, environmental, and tax domains. Quite aside from any direct benefit that their products might engender, companies create jobs, promote investment, and generate taxes that help to pay for public services. Recognising the need for private engagement, the WHO has been cautiously moving towards a set of principles (Framework of Engagement with Non-State Actors, or 'FENSA') to guide how the organisation should relate to businesses in a range of contexts. Public Health professionals and health advocates should also be looking to leverage the tremendous opportunities that private corporations offer for maximising health benefits in wider society, coupled with ongoing work to identify and mitigate harmful practices. Assessing the business operations of individual corporate entities does not preclude continuing work to counter sector-wide issues and the toolkit of common tactics used by various companies and industry associations to resist effective health policies.

How should businesses respond?

Tobacco companies and arms manufacturers exert such an overwhelmingly negative impact that they should frankly cease operations if they are serious about health. The picture is slightly less clear

for producers of other products like alcohol and ultra-processed foods, as well as car manufacturers, the gambling industry, and any other sector that produce goods that are harmful but valued by consumers and can be enjoyed as part of a healthy lifestyle. The message is one of moderation and harm reduction, but redressing the balance of responsibility for overconsumption definitively back towards businesses rather than individuals, given the supply and demand factors discussed above.

At the level of individual businesses, companies should be considering their entire value chains, including the nature of the business, internal- and external processes. Taking one small element as an example, billions of people spend most of their waking lives in the workplace so closer attention to working conditions has the potential to generate huge health benefits. Public health workers can help in this respect, collaborating with businesses to analyse the full spectrum of their activities in order to improve their operations. The assessment is not necessarily expensive, and moving towards becoming a 'healthy employer' is great PR and can lead to a competitive edge both in sales and talent recruitment.

An incredibly simple means of conducting a health impact assessment is to perform a 'SWOT' analysis. This strategy planning tool is simple, fast, widely used, and well-understood in the business world already. The acronym stands for Strengths, Weaknesses, Opportunities, and Threats, and these domains are usually displayed as quadrants in a grid.

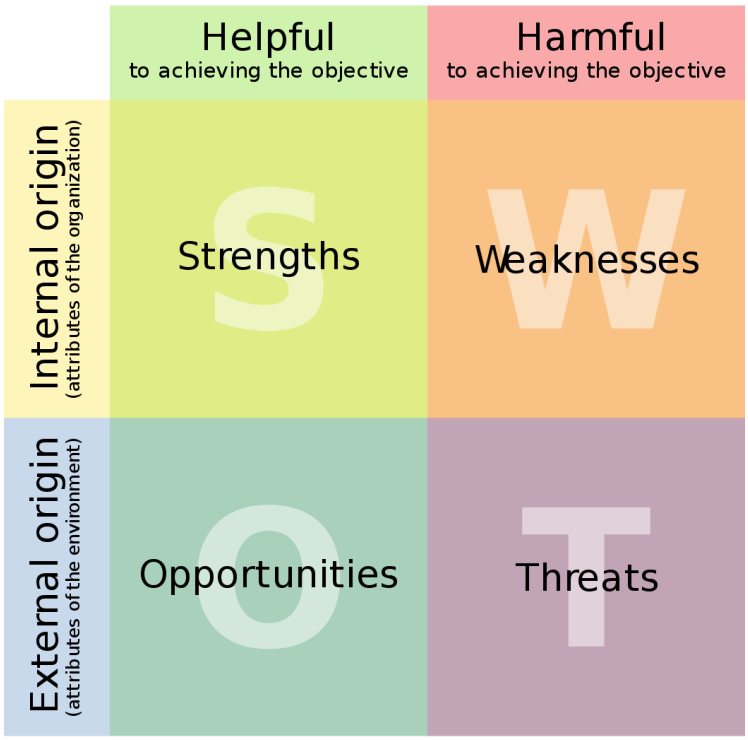

Figure 2: SWOT analysis. (creative commons license: https://en.wikipedia.org/wiki/SWOT_analysis#/media/File:SWOT_en.svg)

Let's do a simple worked example to perform a quick health impact assessment for a fictional fast-food franchise called McRonald's.

Strengths: Major employer with a good track record in terms of labour practices. Recent initiatives to increase the number of healthy options on offer. Major steps taken to reduce the company's environmental footprint. Move towards use of healthier cooking oils. Major sponsor of sporting events and sports-related local charities. Appropriate tax contributions in most territories…

Weaknesses: Marketing to children. Very high levels of salt and saturated fats in the chain's most popular items. Active promotion of high levels of consumption. Marketing strategy emphasises individual responsibility for health and normalises frequent consumption of products with low nutritional value…

Opportunities: As an employer of 1.9 million people, the chain can make a large difference to employees lives through providing access to free drinking water and healthy meal options, making employer contributions to health insurance, promoting active transport to and from work, and paying a living wage. McRonald's feeds approximately 70 million people every day (1% of the world's population). Although the most popular menu items are not particularly healthy, incremental changes could be made to reduce salt, use healthier frying oils, include more salad as a default, and use pricing to incentivise healthier options. With extensive global supply chains, the company can influence agricultural practices and demand that all supply chain businesses adhere to good labour practices such as paying adequate wages.

Threats (to the company's ability to positively impact health): European prices of sugar have fallen in recent years which had allowed competitors to lower prices for many of the items currently offered in McRonald café outlets. The fast-food industry alliance is lobbying against a WHO recommendation that countries introduce fiscal measures to reduce consumption of salt. Palm oil prices remain much lower than high-oleic unsaturated frying oils…

Conclusions: pulling it all together

The profit motive is an incredibly powerful incentive for global commerce. Several thousand years of history have yielded countless examples of situations where the prospect of increasing financial returns has led to corporate decision that adversely impact health. Companies exert their influence on the health through multiple channels, impacting their employees, customers, local economies, and potentially the countries in which they operate through lobbying activities. Each company is unique and invariably contributes to a complex mix of health outcome. The overall balance is relatively clear for some companies and for a handful of sectors, however the picture is complicated again by the large portfolio of products offered by many large transnational operations. To date, CDOH academics have mainly focused on highlighting damaging practice, analysing corporate behaviour through the lenses of marketing, corporate social responsibility (invariably in respect to whitewashing), lobbying, and influence exerted though large supply chains.[88] (Over)consumption can only happen in contexts where products are available, affordable, and culturally acceptable and public health measures tend to map onto these elements.

Further reading:

- Kickbusch I, Allen L, Franz C. The commercial determinants of health. The Lancet Global Health. 2016 Dec 1;4(12):e895-6.
- McKee M, Stuckler D. Revisiting the corporate and commercial determinants of health. American journal of public health. 2018 Sep;108(9):1167-70.
- Thorn M. Addressing power and politics through action on the commercial determinants of health. Health promotion journal of Australia: official journal of Australian Association of Health Promotion Professionals. 2018 Dec;29(3):225.
- Freeman B, Sindall C. Countering the commercial determinants of health: strategic challenges for public health. Public Health Res Pract. 2019 Sep 25;29(3):e2931917.
- Hastings G. Why corporate power is a public health priority. BMJ. 2012 Aug 21;345:e5124.
- Buse K, Tanaka S, Hawkes S. Healthy people and healthy profits? Elaborating a conceptual framework for governing the commercial determinants of non-communicable diseases and identifying options for reducing risk exposure. Globalization and health. 2017 Dec;13(1):34.
- Moodie R, Stuckler D, Monteiro C, Sheron N, Neal B, Thamarangsi T, Lincoln P, Casswell S, Lancet NCD Action Group. Profits and pandemics: prevention of harmful effects of tobacco, alcohol, and ultra-processed food and drink industries. The lancet. 2013 Feb 23;381(9867):670-9.
- Allen L. Bloomfield A. Engaging the private sector. Lancet Global Health. 2016. Dec;4(12):e897-e898.
- Allen LN, Hateft A, Feigl A. Corporate profits versus spending on non-communicable disease prevention: an unhealthy balance. Lancet Global Health. 2019. November 1:7(11)e1482-1483.
- Allen LN. Fiscal policies and global public health. The Lancet. 2019. Aug 10;394(10197):470.
- Allen LN, Feigl A. What's in a name? Re-framing non-communicable diseases. Lancet Global Health. 2017. Feb 1;5(2):e129-30.
- Bertscher A, London L, Orgill M. Unpacking policy formulation and industry influence: the case of the draft control of marketing of alcoholic beverages bill in South Africa. Health policy and planning. 2018 Sep 1;33(7):786-800.
- Rochford C, Tenneti N, Moodie R. Reframing the impact of business on health: the interface of corporate, commercial, political and social determinants of health. BMJ global health. 2019 Aug 1;4(4).
- Stuckler D, Ruskin G, McKee M. Complexity and conflicts of interest statements: a case-study of emails exchanged between Coca-Cola and the principal investigators of the International Study of Childhood Obesity, Lifestyle and the Environment (ISCOLE). J Public Health Policy. 2018;39(1): 49–56.
- Diethelm PA, Rielle JC, McKee M. The whole truth and nothing but the truth? The research that Philip Morris did not want you to see. Lancet. 2005; 366(9479):86–92.
- Gilmore AB, Fooks G, Drope J, Bialous SA, Jackson RR. Exposing and addressing tobacco industry conduct in low-income and middle-income countries. The Lancet. 2015 Mar 14;385(9972):1029-43.
- Knai C, Petticrew M, Mays N, Capewell S, Cassidy R, Cummins S, Eastmure E, Fafard P, Hawkins B, Jensen JD, Katikireddi SV. Systems thinking as a framework for analyzing commercial determinants of health. The Milbank Quarterly. 2018 Sep;96(3):472-98.

- Ireland R, Bunn C, Reith G, Philpott M, Capewell S, Boyland E, Chambers S. Commercial determinants of health: advertising of alcohol and unhealthy foods during sporting events. Bulletin of the World Health Organization. 2019 Apr 1;97(4):290.
- Brown T. Legislative Capture: A Critical Consideration in the Commercial Determinants of Public Health. Journal of law and medicine. 2019 Jul;26(4):764-85.
- Allen LN. Action on salt in China. The Lancet. 2019. Mar 23;393(10177):1202.
- MAANI HESSARI NA, Ruskin G, McKee M, Stuckler D. Public meets private: conversations between Coca-Cola and the CDC. The Milbank Quarterly. 2019 Mar;97(1):74-90.
- Fooks GJ, Williams S, Box G, Sacks G. Corporations' use and misuse of evidence to influence health policy: a case study of sugar-sweetened beverage taxation. Globalization and health. 2019 Dec 1;15(1):56.
- Clarke D, Doerr S, Hunter M, Schmets G, Soucat A, Paviza A. The private sector and universal health coverage. Bulletin of the World Health Organization. 2019 Jun 1;97(6):434.
- Goiana-da-Silva F, Cruz-e-Silva D, Allen L, Nunes AM, Calhau C, Rito A, Bento A, Miraldo M, Darzi A. Portugal's voluntary food reformulation agreement and the WHO reformulation targets. Journal of Global Health. 2019 Dec;9(2).
- Lima JM, Galea S. The Corporate Permeation Index–A tool to study the macrosocial determinants of Non-Communicable Disease. SSM-population health. 2019 Apr 1;7:100361.
- Ireland R, Bunn C, Reith G, Philpott M, Capewell S, Boyland E, Chambers S. Commercial determinants of health: advertising of alcohol and unhealthy foods during sporting events. Bulletin of the World Health Organization. 2019 Apr 1;97(4):290.
- Lopez, Ana Mendez, Rachel Loopstra, Martin McKee, and David Stuckler. 2017. 'IsTrade Liberalisation a Vector for the Spread of Sugar-Sweetened Beverages? ACross-National Longitudinal Analysis of 44 Low- and Middle-Income Countries.'Social Science & Medicine 172: 21–27.
- Voon, Tania, and Andrew D. Mitchell. 2014. 'International Trade Law.' InRegulating Tobacco, Alcohol and Unhealthy Foods: The Legal Issues, edited byTania Voon, Andrew D. Mitchell, and Jonathan Liberman, 86–109. London: Routledge.

A note on referencing

In all books there is a constraint on the permissible number of references. I have kept in core references but necessarily omitted citations for a vast number of claims in this chapter. The evidence for all of the examples used in this chapter are easy to find with a quick internet search. I hope that these mini case-studies spark your interest and I encourage you to review the evidence for yourself.

Declaration of Interests

I work for the English NHS as a family physician and the World Health Organisation as an independent consultant. During medical school I worked part-time in a pub. At no other point in my career have I worked for- or received money or in-kind goods or services from- tobacco, alcohol, food and beverage, gambling, or firearms industries, nor conducted any research wholly or part-funded by industry. In 2018 I joined the Conservative party and stood as a local counsellor on a platform of population health reform, but renounced my membership in 2019. At one time or

another I have voted for four of the UKs main political parties; the Green party, the Liberal Democrats, the Conservatives, and Labour, with a tendency to pragmatic centrism. I hold no stocks or shares, and my Individual Savings Account (ISA) is held with an ethical bank. My NHS pension and Oxford University pension funds continue to invest in damaging industries and I have lobbied for disinvestment.

References

[1] Millar JS (2013) The corporate determinants of health: how big business affects our health, and the need for government action! Can J Public Health 104(4):e327–e329

[2] McKee M, Stuckler D. Revisiting the corporate and commercial determinants of health. American journal of public health. 2018 Sep;108(9):1167-70.

[3] Rochford C, Tenneti N, Moodie R. Reframing the impact of business on health: the interface of corporate, commercial, political and social determinants of health. BMJ global health. 2019 Aug 1;4(4).

[4] Griffith FL. The Petrie Papyri: Hieratic Papyri from Kahun and Gurob (principally of the Middle Kingdom). Quaritch; London, 1898.

[5] Heeßel NP. Diagnosis, divination and disease: towards an understanding of the rationale behind the Babylonian Diagnostic Handbook. InMagic and Rationality in Ancient Near Eastern and Graeco-Roman Medicine 2004 Jan 1 (pp. 97-116). Brill.

[6] Narayana A. Medical science in ancient Indian culture with special reference to Atharvaveda. Bulletin of the Indian Institute of History of Medicine Hyderabad. 1995;25(1-2):100-10.

[7] Curran J. The Huangdi Neijing: The Yellow Emperor's classic of internal medicine. BMJ. 2008 Apr 5; 336(7647): 777.

[8] Koschel K. Opium alkaloids in a Cypriote base ring I vessel (bilbil) of the middle bronze age from Egypt. Ägypten und Levante/Egypt and the Levant. 1996 Jan 1:159-66.

[9] Yeh HY, Mao R, Wang H, Qi W, Mitchell PD. Early evidence for travel with infectious diseases along the Silk Road: Intestinal parasites from 2000 year-old personal hygiene sticks in a latrine at Xuanquanzhi Relay Station in China. Journal of Archaeological Science: Reports. 2016 Oct 1;9:758-64.

[10] Christakos G, Olea RA, Serre ML, Wang LL, Yu HL. (2005) Interdisciplinary public health reasoning and epidemic modelling: the case of black death. Springer, New York.

[11] Barnett C, Cloke P, Clarke N, Malpass A. Consuming ethics: Articulating the subjects and spaces of ethical consumption. Antipode. 2005 Jan;37(1):23-45.

[12] Pigou, A. The Economics of Welfare. London: Macmillan and Co. 1932.

[13] Capewell S, Lilford R. Are nanny states healthier states?. BMJ 2016;355:i6565

[14] Watts N, Amann M, Arnell N, Ayeb-Karlsson S, Belesova K, Boykoff M, Byass P, Cai W, Campbell-Lendrum D, Capstick S, Chambers J. The 2019 report of The Lancet Countdown on health and climate change: ensuring that the health of a child born today is not defined by a changing climate. The Lancet. 2019 Nov 16;394(10211):1836-78.

[15] Hobbes T. Leviathan: Or, The Matter, Forme and Power of Commonwealth, Ecclesiasticall and Civill. University Press; 1904.

[16] Capewell S, Lilford R. Are nanny states healthier states?. BMJ 2016;355:i6565

[17] Mill JS. On liberty and other essays. Oxford University Press, USA; 1998. P68

[18] Locke J. 1689, Two Treatises of Government, P. Laslett (ed.), Cambridge: Cambridge University Press, 1988.

[19] Nuffield Council on Bioethics. Public Health: ethical issues. Nuffield Council on Bioethics, London 2007.

[20] Carlsen A, Chinoy S. How to buy a gun in 16 countries. New York Times 6 Aug 2019. https://www.nytimes.com/interactive/2018/03/02/world/international-gun-laws.html

[21] Triggle N. Pledge to end smoking in England by 2030. BBC News. 23 July 2019 https://www.bbc.co.uk/news/health-49079515 Accessed 1 Jan 2020

[22] Goodchild M, Zheng R (2019) Tobacco control and Healthy China 2030. Tobacco control 28(4), 409-413.

[23] Seth VK. The East India Company—A Case Study in Corporate Governance. Global Business Review. 2012 Jun;13(2):221-38.

[24] King LW. The Avalon Project: Code of Hammurabi. The Avalon Project: Code of Hammurabi. Accessed December. 2016;16. https://avalon.law.yale.edu/ancient/hamframe.asp Accessed 5 January 2020

[25] (Ibid) Aikin BF, Fausti KA. Fiduciary: A historically significant standard. Rev Banking & Fin Law 2010;30:155

[26] Confucius; The Analects; Translated by Arthur Waley; Routledge; London and New York; 1938; 84.

[27] Aikin BF, Fausti KA. Fiduciary: A historically significant standard. Rev Banking & Fin Law 2010;30:155

[28] Milton F. Capitalism and freedom. University of Chicago. 1962.

[29] World Health Organization. Tackling NCDs "Best buys" and other recommended interventions for the prevention and control of noncommunicable diseases. WHO, Geneva 2017.

[30] Severens JL, Milne RJ. Discounting health outcomes in economic evaluation: the ongoing debate. Value in health. 2004 Jul;7(4):397-401.

[31] Barlow P, McKee M, Reeves A, Galea G, Stuckler D. Time-discounting and tobacco smoking: a systematic review and network analysis. International journal of epidemiology. 2017 Jun 1;46(3):860-9.

[32] Hirschhorn, Norbert & WHO Tobacco Free Initiative. (2005). The tobacco industry documents: what they are, what they tell us, and how to search them: a practical manual. World Health Organization. https://www.who.int/tobacco/communications/TI_manual_content.pdf Accessed 29.01.2020

[33] Cobiac LJ. T Vos JL. Veermna. Cost-effectiveness of interventions to reduce dietary salt intake. Heart. 2010;96:1920-5. Medline:21041840 doi:10.1136/hrt.2010.199240

[34] Allen LN. Fiscal policies and global public health. The Lancet. 2019. Aug 10;394(10197):470.

[35] Kickbusch I. Addressing the interface of the political and commercial determinants of health. Health promotion international. 2012 Dec 1;27(4):427-8.

[36] Gornall J. Sugar: spinning a web of influence. BMJ. 2015 Feb 11;350:h231.

[37] Allen LN. Action on salt in China. The Lancet. 2019. Mar 23;393(10177):1202.

[38] Douglas N, Knai C, Petticrew M, Eastmure E, Durand MA, Mays N. How the food, beverage and alcohol industries presented the Public Health Responsibility Deal in UK print and online media reports. Critical Public Health. 2018 Aug 8;28(4):377-87.

[39] Allen LN. Fiscal policies and global public health. The Lancet. 2019. Aug 10;394(10197):470.

[40] Goiana-da-Silva F, Cruz-e-Silva D, Allen L, Nunes AM, Calhau C, Rito A, Bento A, Miraldo M, Darzi A. Portugal's voluntary food reformulation agreement and the WHO reformulation targets. Journal of global health. 2019 Dec;9(2).

[41] Allen LN. Action on salt in China. The Lancet. 2019. Mar 23;393(10177):1202.

[42] Wootan MG, Vickroy L, Pokress BH. Putting nutrition into nutrition standards for marketing to kids: How marketed foods measure up to the interagency working group's proposed nutrition principles for food marketed to children. Center for science in the public interest. 2011. Available at: https://cspinet.org/resource/putting-nutrition-nutrition-standards-marketing-kids [Accessed 6.1.2020]

[43] World Health Organization. Framework Convention on Tobacco Control. 2003 https://www.who.int/tobacco/framework/WHO_FCTC_english.pdf Accessed 29.01.2020

[44] Casswell S. Vested interests in addiction research and policy. Why do we not see the corporate interests of the alcohol industry as clearly as we see those of the tobacco industry?. Addiction. 2013 Apr;108(4):680-5.

[45] Freeman B, Sindall C. Countering the commercial determinants of health: strategic challenges for public health. Public Health Res Pract. 2019 Sep 25;29(3):e2931917.

[46] McKee M, Stuckler D. Revisiting the corporate and commercial determinants of health. American journal of public health. 2018 Sep;108(9):1167-70.

[47] Dalrymple W. The Anarchy: How a Corporation Replaced the Mughal Empire, 1756–1803. London: Bloomsbury 2016.

[48] McKee M, Stuckler D. Revisiting the corporate and commercial determinants of health. American journal of public health. 2018 Sep;108(9):1167-70.

[49] Doll R, Hill AB. The mortality of doctors in relation to their smoking habits. British medical journal. 1954 Jun 26;1(4877):1451.

[50] World Health Organization. Tobacco industry interference with tobacco control. WHO, Geneva 2018

[51] Capewell S, Capewell A. Beware SLEAZE tactics. BMJ: British Medical Journal (Online). 2011 Jan 19;342.

[52] Bates C, Rowell A. Tobacco explained: the truth about the tobacco industry…in its own words. Geneva, WHO 1999.

[53] Hirschhorn, Norbert & WHO Tobacco Free Initiative. (2005). The tobacco industry documents: what they are, what they tell us, and how to search them: a practical manual. World Health Organization. https://apps.who.int/iris/handle/10665/43153

[54] Kickbusch I. Addressing the interface of the political and commercial determinants of health. Health Promot Int. 2012;27(4):427–428.

[55] Kickbusch I, Allen L, Franz C. The commercial determinants of health. Lancet Glob Health. 2016;4(12):e895–e896.

[56] West R, Marteau T. Commentary on Casswell (2013): the commercial determinants of health. Addiction 2013; 108: 686–87.

[57] Wengrow, D., "Prehistories of Commodity Branding," Current Anthropology,Vol. 49, No. 1, 2008, pp. 7-34

[58] National Cancer Institute. The Role of the Media in Promoting and Reducing Tobacco Use. Bethesda, MD: Department of Health and Human Services, National Institutes of Health, National Cancer Institute;

2009.

[59] The Coca-Cola Company. Form 10-K. Annual report pursuant to section 13 or 15(d) of the securities exchange act of 1934. 2018 annual report.

[60] Statista. Nestlé's advertising spending worldwide from 2015 to 2018(in billion U.S. dollars). Accessed 13/01/2020 https://www.statista.com/statistics/286531/nestle-advertising-spending-worldwide/

[61] US Federal Trade Commission. Cigarette report for 2015. Accessed 13/01/2020 https://www.ftc.gov/system/files/documents/reports/federal-trade-commission-cigarette-report-2015-federal-trade-commission-smokeless-tobacco-report/2015_cigarette_report.pdf?utm_source=govdelivery%20

[62] World Health Organization. Tackling NCDs "Best buys" and other recommended interventions for the prevention and control of noncommunicable diseases. WHO, Geneva 2017.

[63] World Health Organization. Framework Convention on Tobacco Control. 2003 https://www.who.int/tobacco/framework/WHO_FCTC_english.pdf Accessed 29.01.2020

[64] Boyland EJ, Nolan S, Kelly B, et al. Advertising as a cue to consume: a systematic review and meta-analysis of the effects of acute exposure to unhealthy food and nonalcoholic beverage advertising on intake in children and adults. Am J Clin Nutr 2016

[65] European Ombudsman. CASE 852/2014/LP. Decision concerning the European Commission's compliance with the Tobacco Control Convention. Decision issued 6 December 2016.

[66] Miller D, Harkins C. Corporate strategy, corporate capture: food and alcohol industry lobbying and public health. Critical social policy. 2010 Nov;30(4):564-89.

[67] Griswold MG, Fullman N, Hawley C, Arian N, Zimsen SR, Tymeson HD, Venkateswaran V, Tapp AD, Forouzanfar MH, Salama JS, Abate KH. Alcohol use and burden for 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. The Lancet. 2018 Sep 22;392(10152):1015-35.

[68] Nestle M. Corporate funding of food and nutrition research: science or marketing?. JAMA Internal Medicine. 2016;176(1):13-4.

[69] Bialous SA. Impact of implementation of the WHO FCTC on the tobacco industry's behaviour. Tobacco control. 2019 Jun 1;28(Suppl 2):s94-6.

[70] Allen LN, Hatefi A, Feigl AB. Corporate profits versus spending on non-communicable disease prevention: an unhealthy balance. The Lancet Global Health. 2019 Nov 1;7(11):e1482-3.

[71] Norum, Kaare. 2004. 'World Health Organization's Global Strategy on Diet, Physical Activity and Health: The Process behind the Scenes.' Scandanavian Journal of Nutrition 49 (2): 83–88.

[72] Thow, Anne-Marie, and Benn McGrady. 2014. 'Protecting Policy Space for Public Health Nutrition in an Era of International Investment Agreements.' Bulletin of the World Health Organization 92 (2): 139–145.

[73] Voon, Tania, and Andrew D. Mitchell. 2014. 'International Trade Law.' In Regulating Tobacco, Alcohol and Unhealthy Foods: The Legal Issues, edited by Tania Voon, Andrew D. Mitchell, and Jonathan Liberman, 86–109. London: Routledge.

[74] Lopez, Ana Mendez, Rachel Loopstra, Martin McKee, and David Stuckler. 2017. 'Is Trade Liberalisation a Vector for the Spread of Sugar-Sweetened Beverages? A Cross-National Longitudinal Analysis of 44 Low- and Middle-Income Countries.' Social Science & Medicine 172: 21–27.

[75] International Centre for Settlement of Investment Disputes. 2016. Philip Morris Brand Sàrl (Switzerland), Philip Morris Products S.A. (Switzerland) and Abal Hermanos S.A. (Uruguay) v. Oriental Republic of Uruguay, July 8. Case No. ARB/10/7.

[76] Food and Drinks Industries Federation (ETL). State aid complaint. Finland. http://www.etl.fi/media/aineistot/lausunnot/kannanotot/state_aid_complaint_excise_duty_in_finland.pdf [accessed 12 December 2018].

[77] Kelsey J. Regulatory Chill: Learnings from New Zealand's Plain Packaging Tobacco Law. QUT L. Rev.. 2017;17:21.

[78] Millar JS. The corporate determinants of health: how big business affects our health, and the need for government action!Can J Public Health2013;104:e327–9.

[79] Repeat Allen LN, Hatefi A, Feigl AB. Corporate profits versus spending on non-communicable disease prevention: an unhealthy balance. The Lancet Global Health. 2019 Nov 1;7(11):e1482-3.

[80] Lown EA, McDaniel PA, Malone RE. Tobacco is "our industry and we must support it": Exploring the potential implications of Zimbabwe's accession to the Framework Convention on Tobacco Control. Globalization and health. 2016 Dec;12(1):2.

[81] Shiffman J. A social explanation for the rise and fall of global health issues. Bulletin of the World Health Organization. 2009;87:608-13.

[82] McAdam D, McCarthy JD, Zald MN, editors. Comparative perspectives on social movements: Political opportunities, mobilizing structures, and cultural framings. Cambridge: Cambridge University Press; 1996.

[83] Benford RD, Snow DA. Framing processes and social movements: an overview and assessment. Annu Rev Sociol. 2000;26:611-39.

[84] World Health Organization. WHO Technical Meeting on Fiscal Policies on Diet May 5-6 2015: Summary Report. Geneva, WHO. 2015.

[85] Institute for Health Metrics and Evaluation. Global Burden of Disease data viz. 2017 data. https://vizhub.healthdata.org/gbd-compare/ [Accessed 28.01.2019]

[86] McGill R, Anwar E, Orton L, Bromley H, Lloyd-Williams F, O'Flaherty M, et al. Are interventions to promote healthy eating equally effective for all? Systematic review of socioeconomic inequalities in impact. BMC Public Health. 2015;15:457.

[87] Resnik DB. Responsibility for Health: Personal, Social, and Environmental. Journal of Medical Ethics 2007; 33(8): 444–445.

[88] Kickbusch I. Addressing the interface of the political and commercial determinants of health. Health promotion international. 2012 Dec 1;27(4):427-8.