

ARTICLE

Designing a just soda tax

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Abstract

Soda taxes are controversial. While proponents point to their potential health benefits and the public projects that could be funded with their revenue, critics argue that they are paternalistic and regressive. In this paper, we explore the prospects for designing a *just* soda tax, one that appropriately balances the often-competing ethical considerations of promoting social welfare, respecting people's autonomy and ensuring distributive fairness. We argue that policymakers have several paths forward for designing a just soda tax, but that the considerations relevant to ethical policy design are more complicated than is sometimes acknowledged.

Keywords: Soda tax; autonomy; paternalism; public health ethics; fairness

Policymakers are increasingly considering and implementing taxes on sugar-sweetened beverages, often to combat the health problems associated with their consumption. Since 2016, Belgium, the UK, Ireland, Portugal, India, Sri Lanka, Malaysia, Thailand, Saudi Arabia and South Africa, among others, have implemented national taxes on these beverages (Global Food Research Program 2022). Seven cities in the USA have also passed such taxes since 2015, including Seattle, WA, Berkeley, CA and Philadelphia, PA, and several states have recently considered doing so, including California, Massachusetts and New York (Haigh 2019).

Sugar-sweetened beverages – hereafter referred to as ‘sodas’ – are a promising target for regulation since they are a discrete item, linked to numerous non-communicable diseases, including type 2 diabetes and heart disease (Vartanian *et al.* 2007; Malik *et al.* 2010), and the largest single source of added sugar in many people's diets (Woodward-Lopez *et al.* 2010; Sánchez-Pimienta *et al.* 2016). In addition, there is increasing evidence that soda taxes are effective at reducing the purchase of soda (Andreyeva *et al.* 2022).

Despite their increasing prominence, soda taxes are controversial, particularly in the USA. While proponents point to their potential health benefits and the valuable public projects that could be funded with their revenue, critics argue that they are

paternalistic and regressive, unfairly burdening low-income households. For example, in 2016 Senator Bernie Sanders characterized Philadelphia's then proposed soda tax as 'a regressive grocery tax that would disproportionately affect low-income and middle-class Americans' (Sanders 2016).

In this paper, we explore the prospects for designing a *just* soda tax, one that appropriately balances the ethical concerns raised by proponents and critics alike. We aim to provide policymakers with guidance for navigating the often-competing ethical considerations of promoting social welfare, respecting people's autonomy and ensuring distributive fairness. We argue that there are several paths forward for the design of a just soda tax, but that the considerations relevant to ethical policy design are more complicated than is sometimes acknowledged.

Our paper builds on and advances the existing literature on soda taxes in public health ethics and economics. Public health ethicists have long discussed whether soda taxes are on balance justified or not, but they have not adequately considered the specific normative considerations that should inform their *design*, for example, the goals policymakers may permissibly pursue, the rate of taxation, and the purposes for which tax revenue should be used (Barnhill and King 2013; Kass *et al.* 2014; Véliz *et al.* 2019; Falbe 2020). As such, these analyses are not fine-grained enough to provide useful guidance to policymakers. Economists and public health scholars, by contrast, offer precise guidance to policymakers, but often fail to consider all relevant normative considerations. In a recent work, for example, Allcott *et al.* (2019) develop a utilitarian model of an 'optimal' soda tax, which, while offering guidance to policymakers, leaves out several non-utilitarian ethical considerations which feature prominently in the public health ethics literature (see also Brownell *et al.* 2009).

We avoid both these pitfalls. Following Allcott *et al.*'s lead, we aim to provide policymakers with guidance regarding the design of a just soda tax, not merely a discussion of its on-balance justifiability. In doing so, however, we also adopt the ecumenical approach common in public health ethics which recognizes that the considerations of respect for persons, beneficence and distributive fairness have normative force and so must be considered in the design of public policy (Kass 2001; Siegel and Merritt 2019; Faden *et al.* 2020; DeGrazia and Millum 2021).

While soda taxes are often treated as a unitary phenomenon in public discussions, we centre our analysis around four independent motives for implementing such taxes which have been proposed by policymakers and scholars: (1) to promote consumer wellbeing, (2) to counter soda companies' manipulation of consumers, (3) to correct negative externalities and (4) to raise revenue. We begin in sections 1–3 with a critical analysis of these motives, identifying their implications for policy design, the justificatory burdens policymakers must discharge if they are to realize them, and the ethical objections they face. In section 4 we turn to the constructive task of showing how policymakers may design a just soda tax, appropriately navigating the competing considerations of promoting consumer wellbeing, respecting people's autonomy and ensuring a fair distribution of costs and benefits.

1. Promoting Consumer Wellbeing and the Problem of Paternalism

A central reason for implementing a soda tax is to disincentivize soda consumption with the aim of improving consumers' wellbeing. As Allcott *et al.* (2019: 1558–1559) note, people exhibit several behavioural biases and knowledge deficits related to soda consumption and so taxes can be used to correct for negative externalities. A soda tax informed by this *externalities motive* should be designed to incentivize optimal soda consumption, which Allcott *et al.* (2019: 1563) reasonably characterize as the level consumers would choose if they had the knowledge of a nutritionist and perfect self-control. Since the aim of the policy is to promote optimal consumption, its status as a *tax* is incidental, and so this motive has no direct implications for revenue use.

Policymakers wishing to act on this motive must demonstrate that their proposed tax is likely to promote an optimal level of soda consumption (and not induce consumers to simply substitute some other unhealthy food or drink for soda). But they must also address a significant ethical objection, for soda taxes informed by the externalities motive run afoul of the principle of respect for persons, paternalistically interfering with the choices of competent agents. We motivate this objection here. In section 4.1, we develop a framework policymakers may use to determine if a soda tax informed by this motive is nonetheless on balance permissible.

The core feature of paternalism is one agent's treatment of another as a child – an incompetent agent who lacks the decision-making capacities to govern their life (Shiffrin 2000: 213; Scoccia 2008: 352–353; Quong 2011: 75; Groll 2012: 697–699; Tsai 2014: 86–87; Le Grand and New 2015: 8–16; Cholbi 2017: 123–124). Policies are paternalistic, we suggest, when they:

1. Aim to improve people's wellbeing;
2. Are imposed without their target's consent; and
3. Are motivated by and/or express a negative judgement about their targets' self-governance abilities (MacKay 2019a: 428).

Soda taxes informed by the externalities motive satisfy these three conditions. They satisfy (1) and (2) since they are implemented to improve consumers' wellbeing and are imposed without individuals' consent. They also satisfy (3) since they are motivated by the judgement that consumers lack the self-governance abilities to decide for themselves how much soda to consume. Implicit in the resort to a soda *tax* is the judgement that consumers cannot be persuaded to make appropriate consumption choices, but instead must be moved or directed by non-rational forms of influence to act in one way rather than another.

Paternalistic policies are *pro tanto* wrong when directed at competent agents, for competent agents have the status of equal autonomous persons and paternalistic policies are disrespectful of them considered as such (Shiffrin 2000: 212–220; Quong 2011: 100–106; Groll 2012: 711–720; Tsai 2014: 86–87; Cornell 2015: 1317–1318; Cholbi 2017: 126–128; MacKay 2019a: 434–436). People are autonomous, we suggest, insofar as they possess the rational capacities necessary to govern their own lives. They are equal insofar as they possess rational capacities that fall within a range, with the lower end defined by the concept of competency – i.e. having the

capacities for understanding, appreciating, reasoning about and choosing among the options before them (Buchanan and Brock 1990: 18–29; Carter 2011: 548–560; MacKay 2019a: 434–436). Paternalistic actions are disrespectful since they fail to acknowledge people’s status as free and equal, instead seeking to take over or replace their agency, either completely or to some extent, for example, through the use of non-rational means of influence such as coercion, taxes or manipulation. By contrast, we respect another person, as Jeremy Waldron (2017: 51) puts it, ‘when we acknowledge and recognize him, when we take seriously his status as a thinking, reasoning moral being’.

Welfarists also value autonomy and so may object to paternalistic policies on the grounds that they are likely to make people worse off. For welfarists, autonomy is valuable as a ‘benefit’, that is, a contributor to people’s wellbeing (Darwall 2006: 265–266). Thus, whenever people are likely to exercise their decision-making capacities in a way that is likely to make them worse off, it is permissible for the government to intervene, provided the intervention will be effective.¹ But, as Darwall (2006: 268) notes, autonomy is also valuable in a non-welfarist sense as a ‘demand’, where this involves the ‘right, claim, or authority that persons have to demand they be allowed to make their own choices and lead their own lives’. On this view, there is value in competent agents being left free to govern their own lives, rather than have them governed by others, even if they are likely to sometimes make poor decisions.² There is thus a moral cost to paternalistic policies insofar as they chip away at people’s status as equal autonomous agents. Where soda taxes are aimed at competent consumers therefore, the internalities motive directly conflicts with the principle of respect for persons.³

Does this conflict speak decisively against soda taxes informed by the internalities motive? Yes, for non-welfarists who hold that governments should never act paternalistically (Flanigan 2017). In section 4.1 however, we explore a middle path, one which recognizes that the imperatives to respect people’s autonomy and promote their wellbeing are both valid moral considerations.

2. Counter-manipulation

Policymakers may also wish to implement a soda tax to counter the manipulation of consumers by soda companies. Kristine Madsen, Faculty Director of the Berkeley

¹Hanna (2018) and Conly (2013) defend the view that it is permissible for governments to coercively interfere with people’s choices when doing so is likely to make them lead longer and happier lives.

²Enoch (2022: 2) draws a similar distinction between autonomy as non-alienation and autonomy as sovereignty. He acknowledges that both are valuable but suggests that autonomy as sovereignty takes priority in the political realm for ‘respecting people’s sovereignty – more so than respecting their non-alienation – constitutes respecting *them*, as *responsible active agents*’.

³One feature of this account of paternalism is that interference with people’s liberty is not a necessary condition of wrongful paternalism. A policy is pro tanto wrong, on this account, if it is motivated by/expresses the judgement that that their targets’ self-governance capacities are deficient. This means that paternalistic subsidies may also be pro tanto wrong, for example, a retirement matching programme under which employers match the contributions of employees with the aim of incentivizing increased retirement savings. While a paternalistic tax is worse insofar as it involves interference with people’s choices, some may find it counter-intuitive that there is anything objectionable about a paternalistic subsidy. Thanks to an anonymous reviewer for discussion on this point.

Food Institute, illustrates this motive nicely: ‘We want to end this epidemic of diabetes and obesity, and taxes are a form of counter-messaging, to balance corporate advertising’ (Price 2019).

Unlike the internalities motive, this *counter-manipulation motive* is consistent with respect for persons. Private actors such as soda companies are bound by this principle, and governments have a legitimate role in preventing them from influencing consumers’ actions using non-rational means such as coercion or manipulation. But, to act on this motive, policymakers must show that (a) soda companies manipulate consumers and (b) their proposed soda tax meets the conditions of permissible counter-manipulation. We develop the counter-manipulation motive here and outline the challenges policymakers face in satisfying (a) and (b).

The concept of manipulation is complex and contested but T.M. Wilkinson provides an account that is adequate for our purposes. On this account, ‘A manipulates B when A intentionally succeeds in influencing B using a manipulative method’ (Wilkinson 2017: 258–259). Manipulation therefore requires: (1) an *intention* to influence B’s behaviour; (2) *success* in influencing B’s behaviour; and (3) the use of a *manipulative method*. Manipulative methods are ways of influencing people’s behaviour that fall between the provision of information or reasons and the use of coercion, and may include deception, certain types of incentives, certain types of nudges, and the omission of options or information (Blumenthal-Barby 2012; Wilkinson 2013). Actions that satisfy (1)–(3) are pro tanto wrong since they are a disrespectful way of influencing people’s choices. As Wilkinson (2013: 345) puts it, ‘manipulation is a form of influence that subverts and insults a person’s autonomous decision making’.

Soda companies are often accused of manipulating consumers (Burke 2009; Ferdman 2015; Healy 2016; Berr 2017; Krans 2017; Valinsky 2019) and these accusations are prima facie plausible for many of their activities would seem to satisfy (1)–(3). These activities clearly satisfy (1) and (2) since soda companies intend to influence consumers and have realized this intention. In the USA, for example, one-half of adults consume at least one soda on a given day (Rosinger *et al.* 2017), and there is evidence that advertising increases soda consumption, particularly in the case of children (Harris *et al.* 2009; Andreyeva *et al.* 2011; Zimmerman 2011; Lesser *et al.* 2013; Connell *et al.* 2014).

While contestable, soda companies also arguably employ manipulative methods. First, advertisements for goods and services typically use techniques that either bypass, undermine or work around people’s rational capacities, for example, playing upon people’s vulnerabilities, emotions or physical desires; or that are deceptive, for example, omitting or misrepresenting evidence regarding the benefits and harms of the good or service in question (Sher 2011; Nestle 2015: 115–130; Akerlof and Shiller 2016). Advertisements for soda are no exception, often employing celebrity endorsements, failing to disclose risks of consumption and appealing to people’s emotions.

Soda companies also, second, engage in practices that can be reasonably construed as forms of omission, aiming to limit or crowd out information regarding the health impacts of soda. In their public relations and lobbying activities, soda companies downplay the harmful health impacts of soda consumption, emphasize

personal responsibility and lack of exercise as the cause of obesity, and play fast and loose with existing evidence (Brownell and Warner 2009). Reviews of industry-funded research also find that it consistently downplays the negative health impact of soda and generally supports industry interests (Lesser *et al.* 2007; Schillinger *et al.* 2016; Litman *et al.* 2018).

Counter-manipulation is an attempt to counter existing manipulation. Wilkinson (2017: 259–261) argues that while it is wrong to manipulate, it is ethically permissible to counter-manipulate when the counter-manipulation either: (i) prevents the manipulation from occurring or (ii) manipulates people into making a better choice while leaving them no more manipulated than they would otherwise be. (i) leads to less infringement of people's autonomy while (ii) involves the same level of infringement but with better outcomes.

Soda taxes could satisfy either (i) or (ii). They could satisfy (i) by countering the message that soda is a harmless cheap treat.⁴ Indeed, there is some evidence that soda taxes reduce consumption by signalling to consumers that soda consumption is not risk free (Cornelsen and Smith 2018; Alvarado *et al.* 2021). Depending on the psychological processes at work here, this could count as an instance of counter-manipulation. Soda taxes could also satisfy (ii) if they manipulate consumers into making better choices. Since (ii) involves directly manipulating consumers' choices, Wilkinson argues that such interventions must satisfy three conditions to be permissible:

- (a) The manipulation must actually result in a better outcome;
- (b) There is no alternative to manipulation on both sides; and
- (c) The degree of counter-manipulation is the same or 'less bad' than the original manipulation (Wilkinson 2017: 261).

The evidence that soda taxes reduce soda consumption is promising and so (a) may be satisfied in most cases. Regarding (b) however, governments have several alternatives on the table that do not involve manipulation, or perhaps involve manipulation that is less bad than a soda tax. For example, governments might better regulate advertising to children, develop public information campaigns, increase research funding, or employ nudges that, while manipulative, are less bad than taxes.⁵ Importantly, it may be easier for municipal- or county-level soda taxes to satisfy (b) compared with federal or state soda taxes since federal and state governments, given their greater authority and resources, may have several alternatives to employing soda taxes qua tools of counter-manipulation, including the regulation of advertising and increased funding for public health research.

Policymakers must also show that consumers' choices are no more manipulated with a soda tax in place than without and that the manipulation is not morally worse than the status quo. Such a demonstration no doubt faces obstacles, particularly since it's not clear how one would ascertain the degree to which people's choices are manipulated. But it is at least plausible that soda taxes are not as manipulative as the

⁴Thanks to an anonymous reviewer for raising this possibility.

⁵For example, Berkeley, CA recently implemented a nudge in large retailers, requiring them to sell 'healthy' food in checkout aisles rather than soda, junk food and candy (Pitofsky 2020).

actions of soda companies, particularly if their advertisements are effective and they do in fact suppress information regarding the harmful effects of soda or directly deceive consumers.

Compared with the internalities motive, policymakers face additional justificatory burdens if they wish to act on the counter-manipulation motive. They must not only show that a soda tax will change consumers' behaviour but also that soda companies do indeed manipulate consumers and that soda taxes are a form of permissible counter-manipulation. Supposing that policymakers can discharge these burdens, however, the policy implications of the counter-manipulation motive are like those of the internalities motive. First, as with the internalities motive, the status of the soda tax as a tax is incidental as its aim is to counter the manipulation of consumers by soda companies. The counter-manipulation motive thus has no direct implications for revenue use. Second, regarding the target level of taxation, in practice, a soda tax designed in accordance with the counter-manipulation motive may look no different from a tax designed in accordance with the internalities motive. The counter-manipulation motive directs policymakers to either *prevent* manipulation from occurring or *manipulate* consumers with the aim of promoting a better outcome. On the former, policymakers should design the tax to promote consumption that is not biased and/or due to knowledge deficits, like the goal of the internalities motive. On the latter, Allcott *et al.*'s understanding of optimal consumption offers a reasonable interpretation of the idea of a 'better outcome'. The counter-manipulation motive may therefore have the same practical implications as the internalities motive.

One might suggest that this discussion of the counter-manipulation motive implies that our concerns with the internalities motive are completely misplaced. If people's soda consumption choices are manipulated by soda companies, doesn't this mean their choices are unfree, meaning there is nothing wrong with paternalistic interference?⁶ There is something to this line of argument, but it must discharge a high justificatory burden. Even if the activities of soda companies constitute manipulation, not all forms of manipulation invalidate a person's consent, thus rendering a choice unfree. As Mandava and Millum (2013: 42) argue, only *deceptive* manipulation, wherein an agent successfully deceives people about the nature of the options before them, invalidates consent since understanding is a requirement of valid consent. *Motivational* manipulation, by contrast, does not violate this condition of valid consent, nor any of the other conditions such as competence or voluntariness (Mandava and Milum 2013: 42). For the activities of soda companies to invalidate consumers' consent therefore, it is not enough that they influence people's motives, for example, through advertisements that play on people's emotions. Rather, they must successfully deceive people regarding the nature of the product they are consuming. While soda companies may omit or misrepresent the negative health effects of their products, to show that soda companies deceive consumers one would need to show that these tactics have led to consumers being misinformed regarding the basic facts about soda. This may be difficult to establish. In the USA for example, most adults are aware that sodas are 'unhealthy', with most reporting that soda consumption is related to weight gain (80.2%), diabetes (73.6%)

⁶Thanks to an anonymous reviewer for raising this point.

and cavities (71.8%) (Park *et al.* 2018). As we discuss in section 4.1 however, the fact that soda companies manipulate consumers has important implications for the on-balance permissibility of soda taxes informed by the internalities motive. Briefly, it is less pro tanto wrong to interfere with people's choices when their decision-making is subject to significant defects – though still competent – than not.

3. Distributive Fairness

Soda taxes are often criticized on the grounds that they are regressive, unfairly burdening low-income consumers (Allcott *et al.* 2019: 1559).⁷ Given the decreasing marginal utility of money, each dollar of soda tax revenue paid by low-income households is more painful than each dollar paid by middle- or high-income households. This concern is exacerbated in the USA and elsewhere by the fact that low-income households consume more soda than high-income households (Allcott *et al.* 2019: 1561–1562).

Unfortunately, regardless of the motive policymakers adopt, the resulting soda tax may distribute benefits and burdens unfairly. We show first that soda taxes informed by either the internalities motive, the counter-manipulation motive or the revenue motive risk unfairly burdening low-income consumers. We then turn to soda taxes informed by the desire to counter externalities and argue that they are subject to a different distributive fairness problem, namely, that they risk exacerbating existing background injustices.

3.1. Unfair burdens to low-income consumers

In addition to promoting consumer welfare or countering manipulation by soda companies, policymakers may wish to implement a soda tax simply to raise revenue. Governments have obligations to residents and non-residents, and they implement taxes to discharge them. Governments may choose to tax soda on the grounds that it is preferable to tax goods, services and/or activities that make people worse off rather than those that make people better off. Since overconsumption of soda often makes people worse off, a soda tax may be one of the more efficient, politically feasible options available to policymakers. For example, in campaigning for Philadelphia's soda tax, mayor James Kenney defended the proposal as a way to raise revenue for pre-K programmes, parks and recreation, and community schools, not as a means to improve consumers' health or correct externalities (Blumgart 2016).

Regardless of whether a soda tax is informed by this *revenue motive* or by the internalities or counter-manipulation motives, however, it is rightly subject to the objection that it risks unfairly burdening low-income consumers. Consider the internalities and counter-manipulation motives first. For both, the aim of the soda tax is to change people's behaviour and so the fact that it imposes financial costs on consumers is regrettable: it would be better, at least in one respect, if there were an intervention that changed consumers' behaviour to the same degree that did not

⁷This objection presupposes that some of the tax is passed through to consumers, a claim for which there is strong evidence (Cawley and Frisvold 2016; Grogger 2017; Pereda and Garcia 2020; Seiler *et al.* 2021).

impose a financial cost on them. As such, the regressive nature of the soda taxes informed by these motives is morally concerning.

For soda taxes informed by the revenue motive, by contrast, their status as a tax is intentional. However, they too unfairly burden low-income consumers since fair systems of taxation are progressive, not regressive, requiring high-income people to pay a higher share of their income than low- and middle-income people (Murphy and Nagel 2004: 130–141).

Some argue that the regressive nature of soda taxes is not a problem since low-income consumers are likely to see the greatest health benefits from reduced consumption (Véliz *et al.* 2019: 29). While regressive financially, soda taxes may be progressive in terms of people's wellbeing with low-income consumers gaining more than middle- or high-income consumers.

The problem with this response is that it presupposes that low-income consumers will significantly change their consumption behaviour if subject to a soda tax. But this need not be the case. Instead, it's very possible that many low-income consumers have inelastic demand and so will receive limited – if any – health benefits from the tax.⁸ Indeed, this is not an improbable result in the USA. While soda consumption is dispersed more widely across the US population than consumption of either cigarettes or alcohol, the top 10% of households still account for 55% of purchases and many of these households are low-income (Conlon *et al.* 2021: 7). Dividing the population into eight clusters, Conlon *et al.* (2021: 14) find that the two groups in society who consume the most soda are the 'Smokers' and 'Everything' clusters, with the former comprising 5.5% of the population and the latter comprising 2.5% of the population (Conlon *et al.* 2021: 14). Both groups tend to be older, lower-income and lower-education, differing only in that the Smokers purchase almost no alcohol. If high-consuming households such as these, as some evidence suggests, are also less price sensitive, they may be disproportionately financially burdened by soda taxes without seeing health gains large enough to compensate for this loss (Etilé and Sharma 2015; Debnam 2017; Li and Dorfman 2019; Valizadeh and Ng 2021).⁹ Indeed, Allcott *et al.* (2019: 1579) acknowledge that if the average elasticity of low-income consumers is low enough, the optimal soda tax is a subsidy.

One might argue that increased financial burdens to these households are defensible if the aggregate benefits to other consumers are greater. We reject this utilitarian line of argument, however, for this approach may yield distributions of costs and benefits that are widely recognized as unfair wherein small benefits to the many outweigh large costs to the few (Wolff 2006: 5). We suggest that a policy that allocates benefits to some at the cost of imposing significant burdens on an already disadvantaged population is unfair even if the aggregate benefits outweigh the aggregate burdens. Basic fairness demands that governments not impose soda taxes

⁸It's possible that these consumers will reduce their consumption of other sugary foodstuffs in response to the tax and so still see health benefits from the tax. There is currently not enough empirical evidence to decide this question one way or the other. Thanks to an anonymous reviewer for raising this point.

⁹Conlon *et al.* (2021: 7) argue that this is currently the case with taxes on alcohol and cigarettes, with 10% of households in the USA paying 80% of taxes on alcohol and cigarettes (excluding alcohol consumed outside the home).

which, for example, yield small health benefits for consumers with high elasticity, but no health benefits and only higher prices for low-income consumers with low elasticity.

Our analysis implies that soda taxes informed by the externalities, counter-manipulation and revenue motives risk unfairly burdening low-income consumers. We suggest some strategies policymakers may adopt to minimize this risk in section 4.2, but first show that soda taxes designed to counter negative externalities are subject to a different problem of distributive fairness.

3.2. Externalities and background injustice

As Allcott *et al.* note, soda consumption may lead to health problems for consumers, and these problems may impose costs on governments in the form of higher spending on healthcare programmes. Policymakers may therefore wish to implement soda taxes to correct for these negative externalities, raising the price of soda and so requiring consumers to bear the full costs of their consumption.

Soda taxes informed by this *externalities motive* function as *Pigouvian taxes*. Pigouvian taxes are a principal way that governments can address the market failure of negative externalities which occurs when the costs of a market transaction are not borne solely by the parties to the transaction, but also by third parties. Pigouvian taxes raise the price of the good or service to cover the negative externality; by incorporating the social cost in the price of the good or service, the efficient quantity of the good or service – the quantity that maximizes net social benefit – will be consumed (Pigou 1962: 185–192).

A soda tax informed by the externalities motive should be equivalent to the size of the externality and fairness implies that policymakers direct the revenue to the harmed third party – i.e. the healthcare system. Importantly, policymakers face the justificatory burden of showing that soda consumption imposes externalities on taxpayers. This might not be the case, for if the diseases caused by soda consumption decrease life expectancy, soda consumption may yield a *positive* externality for taxpayers since they would not need to provide healthcare and pension benefits to those who die early (Bhattacharya and Sood 2011).

For it to be permissible to implement a soda tax informed by the externalities motive however, it must also be *fair* to require consumers to pay higher prices for soda (Heath 2020: 209–212). It would appear to be fair to do so, for the decision to consume soda is a voluntary one and it is in principle fair to hold people responsible for the consequences of their voluntary choices. In this way, soda taxes informed by the externalities motive are not subject to the same problem of distributive fairness as the internalities, counter-manipulation and revenue motives. If the soda tax were lowered to offset the burden on low-income consumers, they would not bear the full costs of their transactions. The cost of higher healthcare spending would instead be unfairly imposed on taxpayers who do not overconsume soda. However, considerations of distributive fairness are not limited to ensuring that people bear the full costs of their choices.

Consider what we call the ‘balance of accounts’ problem. Suppose that over the course of 5 years, A borrowed \$5000 from their neighbour B. Although A promised to pay B back in a timely manner each time A borrowed money, A never did.

Suppose that while B is mowing their lawn, B's lawnmower ejects a small stone which hits A's kitchen window, cracking it. Would it be fair for A to have the window repaired at a cost of \$5000, and demand that B pay the bill? Had A not failed to repay their debts to B, we would suggest that this request would be fair, if not neighbourly. But, given that A owes B \$5000, it is unfair for A to ask B to pay up. Instead, A should suggest they 'call it even', and perhaps also apologize for never paying B back on time.

This case is relevant to soda taxes for in at least some jurisdictions, governments have an existing debt to many if not most low-income residents who are likely to be disproportionate payers of a soda tax. In many jurisdictions, governments have not established an adequately just system of cooperation, ensuring, for example, that low-income residents have a fair share of income and wealth, adequate educational and occupational opportunities, and access to health insurance, among other goods governments have a duty to provide. In cases where governments have not treated low-income residents justly, they owe a debt to them since they have not, and are not, providing them with the resources and services to which they have a moral claim. It would therefore be unfair to ask these residents to 'pay up' for the higher healthcare costs they incur because of soda consumption.¹⁰

This problem is particularly acute in the USA where soda consumers are disproportionately low-income, Black or Hispanic people (Ogden *et al.* 2011; Rosinger *et al.* 2017). Low-income people experience worse self-reported health and life expectancy than middle- and high-income people (Hero *et al.* 2017; Chetty *et al.* 2016), and in many parts of the country, their children have lower rates of relative social mobility (Chetty *et al.* 2014). There are also large gaps in income and wealth between Black and Hispanic Americans on the one hand, and white and Asian Americans on the other (Bhutta *et al.* 2020; Semega *et al.* 2020), and Black Americans have significantly lower life expectancies than other Americans (Arias *et al.* 2021). The causes of these disparities are, of course, complicated. But many are attributable to the racist policies of the past and the failure of many levels of government to provide an adequate social safety net for low-income Americans – including health insurance – and provide equal educational opportunities to children (Shelby 2016; Bailey *et al.* 2021; Braveman *et al.* 2022). Imagine one of the poor performing cities or states in the USA explaining to its low-income Black and Hispanic residents that it must impose a soda tax to recoup the costs consumers are likely to impose on the public healthcare system. Might not these residents justifiably respond that they have their own bill that the government must pay?

Our line of argument does not imply that governments act wrongly by implementing a soda tax to recoup the costs imposed on them by overconsumption of soda: it is *in principle* fair (as well as efficient) to do so. However, it does imply that governments must be careful not to impose costs on residents to whom they owe a debt.¹¹

¹⁰Davies and Savulescu (2019) and Kniess (2018) offer related arguments against holding people accountable for the negative consequences of their health behaviours under conditions of injustice.

¹¹Our argument echoes Shelby's (2016: 213–219) position that only people who are subject to tolerably unjust institutions have civic obligations.

One might wonder about the scope of our argument. Does it imply that governments may never impose costs on people not subject to adequately just institutions? For example, is it wrong for local transit agencies to require all riders to pay bus fares or for police to impose speeding tickets?

Our argument certainly has implications beyond the imposition of soda taxes. There are probably other situations where it is unfair for governments to impose costs on people because it owes a debt to them. For example, our argument would likely imply that US state governments are wrong to require low-income people to pay Medicaid premiums. But our line of argument should not be taken to imply that governments *always* act wrongly when they impose costs on people not subject to adequately just institutions. Instead, one must consider all the relevant normative considerations. For example, it may be fine for local transit agencies to require all riders to pay bus fares since the locus of unjust institutions is state or federal governments. Similarly, it may be fine for police to enforce speeding tickets because people have a duty to respect the safety interests of others and governments are entitled to enforce these duties even if they do not fulfil their duties of distributive justice.

To sum up, it is in principle fair for governments to act on the externalities motive, but not with respect to people subject to deeply unjust institutions. In section 4.2, we explore how soda taxes may be designed to ensure that low-income residents are no worse off than they would otherwise be.

4. Designing a Just Soda Tax

We have identified four *prima facie* plausible reasons to implement a soda tax: (1) to correct internalities; (2) to counter manipulation by soda companies; (3) to correct externalities; and (4) to raise revenue. We have identified the justificatory burdens policymakers must meet if they are to act on these motives and have also raised several ethical problems that policymakers must address. Table 1 summarizes our analysis.

Policymakers may adopt any of the four motives individually or in combination. For example, policymakers may wish to promote consumers' wellbeing and correct for negative externalities. They may be concerned to counter the manipulation of consumers but also hold them accountable for the costs their choices impose on others. Policymakers may also wish to counter manipulation and promote consumers' wellbeing, though as we note above, in practice a soda tax designed to realize one of these motives is likely to realize the other. Still other combinations are possible.

However, to design a soda tax that is just, policymakers must address the ethical problems identified above. In this part of the paper, we show how they can do so. We begin with a return to the problem of paternalism and argue that soda taxes informed by the internalities motive may be permissible when certain conditions are satisfied. We then turn to the problem of distributive fairness and sketch the broad contours of a revenue recycling scheme which can avoid unfairly burdening low-income consumers and exacerbating background injustice.

Table 1. Summary

Motive	Target Level of Taxation	Revenue Use	Justificatory Burden	Ethical Problems
Internalities	Optimize consumption	No direct implications	Soda taxes must promote optimal level of soda consumption	Paternalism Unfair burdens on low-income consumers
Counter-manipulation	Optimize consumption	No direct implications	Soda companies must manipulate consumers Soda tax must satisfy conditions of permissible counter-manipulation	Unfair burdens on low-income consumers
Externalities	Cover externality	Healthcare system	Soda consumption must impose externalities	Unfair to consumers not subject to adequately just institutions
Revenue	No direct implications	Public projects	Soda tax efficient for raising revenue	Unfair burdens on low-income consumers

4.1. Addressing the problem of paternalism

Soda taxes informed by the internalities motive are paternalistic. For scholars who hold that paternalistic policies are always wrong on balance, it is not permissible to implement a soda tax aimed at improving consumers' wellbeing. But others recognize that the imperatives to respect people's autonomy and promote their wellbeing are both valid moral considerations that must be balanced (Shafer-Landau 2005; de Marneffe 2006: 81–89; Scoccia 2008: 363–374; Le Grand and New 2015: 147–151; Cholbi 2017: 125–126; DeGrazia and Millum 2021: 36–38). For them, while soda taxes are pro tanto wrong, they are not necessarily wrong on balance. Provided the pro tanto wrong is minor enough, and the improvement to people's wellbeing large enough, soda taxes may be designed with the internalities motive in mind. This position aligns with the ecumenical approach we adopt in this paper and we explore its implications for policy design here.

Allcott *et al.* (2019: 1563) provide an account of the *benefits* of soda taxes to consumers in terms of optimized consumption. In other work, one of us – MacKay – has provided an account for thinking about a paternalistic policy's *degree of pro tanto wrongness*. On this account, the degree of a paternalistic policy's pro tanto wrongness varies along two dimensions (MacKay 2019a: 438–439). The horizontal dimension consists of the number of people wronged by the policy, namely, competent soda purchasers who have not authorized it. The vertical dimension concerns the wrong's intensity, which depends on five factors (see also Wilson 2021: 107–108). First it depends on the quality of people's decision-making with respect to the choice in question. Agents who are competent to make a decision may still exhibit defects in their decision-making, for example, because of cognitive bias, and it is arguably worse to act paternalistically towards an agent exhibiting no defects than one who is exhibiting some defects. The wrong's intensity depends, second, on whether the policy is an example of *means* paternalism or *ends* paternalism, that is, whether the policy concerns people's goals or values or merely how they realize them. Ends paternalism is more objectionable than means paternalism since the choice of ends is value-laden and so is more central to our identity as self-determining agents (Cholbi 2017: 133–134). The wrong's intensity depends, third, on whether the policy singles out particular populations as incompetent to make certain choices. When policies do so, they undermine the equal status of residents, suggesting that some are less deserving of their status as equal autonomous agents than others (MacKay 2019a: 443).

The wrong's intensity also depends, fourth, on the degree of support for the policy among the target population. Even if the targets of the policy do not authorize it, rendering it not paternalistic, a policy is more respectful of them as autonomous agents if it reflects their preferences than if it does not (MacKay 2019a: 443–444). Finally, for paternalistic policies that interfere with people's autonomy, for example, policies that coerce, tax or manipulate, the wrong's intensity depends on the degree to which the policy exercises control over its target's choices. A coercive policy is thus morally worse than a tax or one that manipulates people to make one choice rather than another (MacKay 2019a: 445). Table 2 summarizes our analysis of the vertical dimension.

Table 2. Vertical dimension

Factors along vertical dimension	Low pro tanto wrongness	High pro tanto wrongness
Decision-making quality	Many defects	Few defects
Type of paternalism	Means	Ends
Singling out	No	Yes
Target population support	Wide	Narrow
Degree of control	Nudge or tax	Coercion

How soda taxes fare along these dimensions will differ from jurisdiction to jurisdiction. Along the horizontal dimension, it depends on how the soda tax has been implemented and the proportion of soda purchasers who are competent to make decisions regarding soda consumption. Adults are surely competent to make such decisions. Although they suffer from various behavioural biases and have knowledge deficits, competency does not require perfect rationality or full information. More generally, decisions about soda consumption are no different from the other choices adults make day to day – i.e. subject to bias and knowledge deficits – and the view that adults are not competent to make decisions regarding soda consumption would imply they are not competent to make decisions about nearly anything. The case may be different with children and adolescents however, who may be a central target of soda taxes.¹²

Along the vertical dimension, soda taxes do well on the degree of control factor since they are a tax and not a ban. They are also likely to be a form of means paternalism since consumers value their health. Soda taxes may also do well on the quality of decision-making factor since their consumption choices are no doubt often influenced by cognitive biases and weakness of the will and are subject to the manipulation of soda companies. Soda taxes may do worse on the other factors, however. While they do not single out any population *de jure*, they might do so *de facto*. In the USA, for example, soda consumers are disproportionately low-income Black or Hispanic people, and scholars have argued elsewhere that the choice of which ‘unhealthy’ behaviours policymakers should target is often driven by stigma (Friesen 2018). The level of support for soda taxes among soda consumers is also likely to vary by jurisdiction (see Dewey 2017; Peters 2017).

Once soda taxes are evaluated along these dimensions to determine their level of pro tanto wrongness, the next consideration is the degree to which they promise to improve people’s wellbeing. This is also likely to vary by jurisdiction. For it to be permissible for policymakers to design a soda tax informed by the internalities motive, the proposed tax must score well on the above-mentioned dimensions of pro tanto wrongness and promise to significantly improve people’s wellbeing. Making this judgement is not simply a matter of conducting a cost-benefit analysis for it involves consideration of wellbeing on the one hand and the moral wrong of

¹²A further issue concerns soda taxes that are designed to improve children’s health but are targeted at the purchasing decisions of their parents. Elsewhere, one of us – MacKay (2019b) – offers a discussion of the ethics of policies exhibiting such ‘parent-targeted’ paternalism.

disrespect on the other. But this need not mean that policymakers must jettison all forms of economic analysis. Some scholars have suggested ways to integrate non-utilitarian judgements of wrongness into forms of economic analysis. For example, Zamir and Medina (2008) argue in favour of a deontologically constrained cost-benefit analysis which includes a threshold function. Laws or policies which include deontic wrongs – including legal paternalism – are permissible, on this account, only if the value of this function is positive. Alternatively, policymakers may need to make challenging, on balance judgements regarding the most just course of action.

In any case, the framework we articulate here outlines the factors policymakers must consider when determining whether a soda tax informed by the internalities motive is permissible. In our view, the problem of paternalism does not pose a decisive obstacle to the design of a just soda tax. We turn next to the problem of distributive fairness.

4.2. *Distributive fairness and revenue recycling*

Soda taxes informed by the internalities, counter-manipulation or revenue motives risk unfairly burdening low-income consumers. Soda taxes informed by the externalities motive risk treating people not subject to adequately just institutions unfairly. We suggest here that policymakers might be able to avoid these problems by supplementing the soda tax with a well-crafted revenue recycling programme.

For the internalities and counter-manipulation motives, the concern is that the tax will make some low-income households significantly worse off than they would otherwise be due to increased soda prices. For the revenue motive, the concern is that the soda tax will be regressive, whereas fair tax systems are progressive. The simplest way to address these unfair burdens is to recycle the tax revenue back to low-income consumers by means of a tax rebate or credit system, policies that many jurisdictions currently employ to counter the regressive nature of sales taxes (Davis 2019). Jurisdictions may also make the income tax system more progressive, though it may not be politically feasible to do so (Allcott *et al.* 2019: 1580).

Revenue recycling programmes that fund important public projects targeting low-income residents may be popular with voters, making soda taxes politically feasible in some jurisdictions, but they may not directly benefit consumers who are unfairly burdened by the tax, for example, consumers who don't make use of the newly funded programmes. In addition, many of the programmes funded by soda tax revenue are programmes governments have an obligation to fund by means of a progressive tax system. For example, soda tax revenue in Philadelphia has been allocated to pre-K, community schools, libraries, parks and recreation centres (McCrystal 2020). But this revenue recycling scheme does not address the distributive fairness problem since middle- and high-income Philadelphians should be funding these services. Indeed, this problem has been exacerbated in Philadelphia with many higher-income households avoiding the soda tax by traveling outside city limits to purchase soda at the reduced rate (Seiler *et al.* 2021). Low-income areas, by contrast, have the lowest reduction of soda purchases within the city limits, resulting in a greater financial burden on poorer households with few health gains realized.

Designing a revenue recycling policy that in fact secures fairness for low-income consumers may be challenging, however. If Conlon *et al.* (2021: 2) are correct that

10% of the population purchases 55% of soda volume, tax rebates/credits based on income may not ensure fairness for some households, namely, high-consuming, low-income households with inelastic demand. As they put it:

Our findings suggest that policymakers should carefully consider the distributional implications of raising tobacco, alcohol, or SSB taxes. A narrow set of households bears these taxes; unless policymakers believe that even higher taxes will lead them to smoke and drink substantially less, this small swath will bear much of the additional burden, too. Attempts to compensate households for a larger sin-tax burden, such as through the tax code, would need to be laser-focused on these small segments. (Conlon *et al.* 2021: 4)

It's not at all clear what such a 'laser-focused' revenue recycling policy would look like, introducing an obstacle for policymakers wishing to implement a soda tax informed by either the internalities, counter-manipulation or revenue motives.

For taxes informed by the externalities motive, the tax should be set at a level to cover these externalities and revenue should be directed to the healthcare system. In cases where not all consumers are subject to adequately just institutions, as is arguably the case in the USA, governments face the challenge of enacting a soda tax that does not burden those to whom they owe a debt. Where some of these consumers are likely to be high consuming with inelastic demand, the same problem which arises with the above motives arises here as well. A system of revenue recycling based on income may not fully account for the costs borne unfairly by these households.

5. Conclusion

Our central aim in this paper has been to identify the normative considerations that should inform the design of soda taxes. By focusing on the question of policy *design*, we hope to break new ground in the public health ethics literature where scholars largely consider whether soda taxes should be implemented or not. By introducing and motivating the non-utilitarian considerations of respect for persons and distributive fairness, we challenge public health scholars and economists to expand the factors they consider in their economic analyses.

A principal conclusion of our paper is that the project of designing a just soda tax is more challenging and complicated than is often acknowledged. Many of these problems stem from the ways in which such taxes may burden low-income consumers and/or consumers subject to unjust institutions. While soda taxes are often framed as an effective tool for achieving behavioural change, it is imperative to consider the structural background conditions in which they are implemented. Soda taxes may be a just policy for improving people's wellbeing or addressing rising healthcare costs, but only if policymakers ensure that they do not unfairly burden low-income people or exacerbate existing injustices. We hope our paper offers policymakers an accurate map of the relevant moral landscape as well as some paths forward for the design of just policy.

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