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David Switzer

University of Missouri, Truman School of Public Affairs, Columbia, MO

ABSTRACT

The tension between individual freedom and the public interest has been at the center of environmental debates since Garrett Hardin's article on the tragedy of the commons. Debates over bottled water are no different. Opponents of bottled water criticize its wasteful production, exaggerated advertising, and lack of stringent regulation. Indeed, bottled water may present a unique harm to the public interest. This does not mean that coercive action is the only policy solution. By understanding the reasons why individuals consume bottled water it is possible to design policies that allow for preservation of choice and protection of the public interest.

KEYWORDS

Bottled water; individual freedom; coercion

On 11 March 2014, the San Francisco board approved an ordinance banning the sale of bottled water on city property, making it the second United States city to enact a bottled water ban (Timm, 2014). David Chiu, the author of the ordinance, suggested that the legislation was necessary because of the 'incredibly wasteful and environmentally damaging' nature of bottled water and the fact that San Francisco had access to quality water from the Hetch Hetchy reservoir (Sabatini, 2013). Kate Krebs, a spokeswoman for the American Beverage Association, protested that, 'The consumer should have a choice on how they drink their water' (Sabatini, 2013). The banning of bottled water sales on San Francisco city property is just one example of a community attempting curb the environmental costs of bottled water. The comments by Chiu and Krebs reveal the fundamental issue of the debate between those who think the growing use of bottled water must be stopped and those who believe bottled water consumption should continue. In citing the wasteful nature of bottled water consumption, as well as the reliable source of water already available, Chiu appealed to the public interest, suggesting that by banning bottled water, San Francisco would provide a cleaner environment for all. Meanwhile, Krebs, in arguing for consumer choice, appealed to individual freedom.

The tension between the public interest and individual freedom has been at the center of environmental debates since Hardin's (1968) seminal article on the tragedy of the commons. In suggesting that Adam Smith, or at least a common interpretation of Smith, was wrong, and that individuals acting in their interest does not always lead to

CONTACT David Switzer switzerd@missouri.edu University of Missouri, Truman School of Public Affairs

optimal societal outcomes, Hardin argued that individual freedom can at times be indefensible. Famously, Hardin argued that the solution to the tension between individual and public interest was coercion, stating that even if unjust, coercion is preferable to the alternative: the destruction of commonly held resources in the Earth. Hardin's insight that individual freedom and the public interest are often at odds has shaped the way we think about environmental issues, and even if his prescription of coercion is controversial, it is difficult to question his insight that many environmental issues arise from individual choices. Any number of individual choices, from driving an SUV to consuming meat can lead to environmental degradation. Bottled water consumption is no different. When people drink water from the bottle over the tap, they are participating in a process that impacts the shared environment. The process of producing and consuming bottled water leads to the use of additional water in production, the use of oil in production and transport, and, when bottles are not recycled properly, increased pollution in landfills. In the case of bottled water, individual freedom and the public interest in a clean environment are in tension.[1]

The goal of this paper is to explore the tension between public interest and individual freedom in bottled water consumption and to ask whether the preservation of public interest requires constraining individual choice in this case. The paper begins by exploring the charges brought against bottled water and questioning whether the claims are specific to bottled water. I argue that many of the claims against bottled water are not unique on their own, but rather symptomatic of larger societal problems. Still, the growing consumption of bottled water is a threat to the public interest mainly because of the nature of the product. Bottled water is environmentally damaging while a categorically similar product is available without similar impact. After exploring the ways in which bottled water presents a threat to the public interest, I question whether the harm indeed justifies coercion, arguing that when non-coercive options are available, we should explore their potential for changing behavior. I specifically investigate the potential of libertarian paternalism for nudging individuals away from bottled water. I then explore the reasons frequently given for choosing bottled water over the tap. By understanding these reasons, it is possible to explore non-coercive policies that may lead individuals away from the bottle. There are policies that may curb bottled water consumption that embrace the reasons individuals choose bottled water rather than constrain their choice. In the case of bottled water consumption, individual freedom and the public interest may actually work together.[2]

The Problem of Bottled Water

In exploring the ways in which individual choice can be made to work in the direction of the public interest in the case of bottled water, it must first be established what that public interest is, and whether growing bottled water consumption works against it. The full case against bottled water cannot be rehashed here – scholars, activists, and journalists have filled books on the topic – but it is useful to understand the arguments that have been made. Investigating whether the claims made against bottled water are specific to bottled water or whether they are examples of larger phenomena is an important step in understanding how its consumption may harm the public interest. It could be argued that whether bottled water is a unique offender is irrelevant to the

question of whether policy to prevent its consumption is appropriate. I would suggest, however, that if the problems caused by bottled water are not unique, then the discussion of policy should be about larger systematic issues, rather than bottled water alone. Essentially, the goal of this section is to ask 'why bottled water?'

The first charge made by critics of bottled water is that the production, sale, and consumption of bottled water should be stopped because they allow manufacturers to profit from something that is a human right (Barlow & Clarke, 2002; Clarke, 2005). This is a common critique that has not only been applied to bottled water, but to water privatization generally (Bakker, 2010). But does a human right to water exist, and if so, does it imply that the privatization of water is unacceptable? A large literature has developed around the existence of a human right to water. One of the reasons for the debate is that none of the primary United Nations conventions on human rights directly specifies a human right to water (Bakker, 2010). Still, many argue that such a right exists and that it is important to recognize it as an independent right, rather than simply existing within the established rights to food and life (Gleick, 1998; Risse, 2014). Most recently, Mathais Risse (2014) has taken on the challenge of establishing a human right to water. He argues that the collective ownership of the earth generates a right to membership in the global order. Because active citizenship is not possible without health, states and organizations are required to meet basic needs, and water is included these (Risse, 2014).

The goal here is not to establish a human right to water, but to evaluate the implications of such a right for bottled water. Tacitly accepting that a right to water exists, what are the duties imposed by it, and what do they mean for the acceptability of bottled water? At a minimum, a right to water suggests a negative duty for states, which would require that states not actively prevent access to water (Williams, 2007). However, most who argue that a human right to water exists contend that a positive duty exists as well. States have a responsibility to ensure that all citizens have access to safe, affordable drinking water (Williams, 2007; Risse, 2014). Indeed, Risse (2014) argues that states have a responsibility to provide drinking water to citizens of other states if the right is not being met. Additionally, Williams (2007) argues that corporations may be bound by a human right to water as well.

So if it is accepted that access to safe drinking water is a human right, and it creates duties for the state to provide water, does this indeed imply that bottling water is a violation of that right? It seems that what is implied by these duties is not a total avoidance of bottled water, but rather that states are required to regulate the production of bottled water in order to ensure that the water is meeting health standards, and not preventing citizens from accessing water on their own. As Risse (2014, 194) puts it, 'a human right must constrain private markets to make sure everybody has access to enough safe water.' Constraining bottled water companies does not mean ending consumption. Put another way, since human rights say nothing about the delivery of rights, then there exists no contradiction between privatization and the human right to water (Williams, 2007, p. 2).

Another issue presented by the critics of bottled water is safety. While bottled water manufacturers present their product as pure, critics suggest that bottled water is just as vulnerable, if not more vulnerable, to contamination as tap water. Ikem et al. (2002) analyzed 25 brands of bottled water purchased in the United States and compared their

contents to EPA water standards, finding that in many cases bottled water failed to meet standards. They also found that spring water, thought to be cleaner than purified tap water, contained even higher levels of chemicals. This result is consistent with studies of bottled water in Canada (Pip, 2000; Warbuton et al., 1998) and Brazil (Zamberlan da Silva et al., 2008). Research has also found that when stored at higher temperatures, plastic bottles made of polyethylene terephthalate (PET), the most common plastic used for bottled water, may leach antimony, a regulated contaminant, into the water, especially in higher temperatures (Westerhoff, Prapaipong, Shock, & Hillaireau, 2008). These findings support claims that bottled water quality is insufficiently regulated, and may potentially lead to health risks for consumers (Clarke, 2005; Gleick, 2010; Olson, 1999).

While the Food and Drug Administration (FDA) regulates bottled water, the regulations are often not as stringent as EPA regulations of tap water, and the monitoring ability of the FDA is limited. A National Resource Defense Council study (Olson, 1999) found that bottled water plants were investigated on average only every five to six years. Peter Gleick (2010) points out that the issue may be larger, since most inspections do not actually involve testing. Additionally, Gleick outlines some of the circular reasoning involved in the decision not to regulate bottled water more heavily. The FDA argues that there is little need to monitor bottled water because bottled water has a good regulatory record, but it is difficult to know how good a compliance record bottled has because of how infrequently it is investigated. Further, Gleick (2010) has argued out that the reporting mechanisms meant to inform citizens about issues with bottled water are limited. While the Safe Drinking Water Act requires that all utilities report tests and violations to regulatory officials, and that they distribute reports about the quality of water, no such requirements exist for bottled water. Gleick (2010) points out that while violations of tap water regulations are frequently reported in the local news, bottled water recalls rarely receive attention. Gleick's analysis found that only one third of bottled water recalls were ever made public.

These critiques of bottled water safety, however, are not issues that deal with bottled water as bottled water, but rather an issue of a higher order. If the concern with bottled water is that it is unsafe because of a weak regulatory regime, the answer is not coercive action against bottled water, but improved regulation. Strengthening FDA regulation to the point where it is as stringent as the EPA's regulation of tap water would seemingly alleviate any concerns of safety. Indeed, the lack of stringent regulations seems to not be a failure relating to bottled water producers, but rather a failure of the state to ensure the human right to safe water. Improving the regulatory regime governing bottled water is certainly justifiable, but again, the solution to the safety concerns is not coercive action against the individuals drinking bottled water. Indeed, in the case of drinking water, the rationale for regulation is to solve problems of asymmetrical information between producers and consumers (Breyer, 2009). The mandated annual reports distributed by water utilities are indicative of this goal. A similar regulatory regime for bottled water would work towards limiting informational asymmetries between the producers of bottled water and its consumers.

The third major point on which critics have condemned bottled water companies is the ways in which they market products, with their tactics even compared to those of snake oil salesmen (Clarke, 2005; Gleick, 2010). Critics argue that advertisements deliberately deceive consumers by suggesting that bottled water is cleaner and purer than it

is, by implying that tap water is unsafe, and by alluding to potential health benefits that bottled water provides. This too is not a problem of bottled water, but a problem with the way advertising works in general. As Steve Vanderheiden suggests in his assessment of similar criticisms levied against SUV manufacturers, 'If advertisers were to be prohibited from implying that products had any desirable properties that could not be substantiated by double-blind testing procedures, the modern advertising industry would shrink dramatically in ambition and reach' (2006, p. 31). In criticizing the SUV industry for its advertising strategies, Vanderheiden argues, the anti-SUV movement is being disingenuous; a similar charge could be levied against critics of bottled water. A dramatic reduction in ambition and reach of the advertising industry might be a good thing. The solution would not be specific to bottled water, but rather a part of a larger move against exaggerated claims in marketing. The problem of advertising alone does not place bottled water as a unique offender.

Perhaps the biggest concern with the growing consumption of bottled water, and the one most often used to justify coercive action against it, is the environmental impact. The concern over the environmental impact of bottled water can be broken down into three distinct criticisms. First is the problem of water takings. The taking of water from ground and surface sources may disrupt the ability of local citizens to use the water. The pumping of groundwater can create cones of depression that cause the water table to drop below residents' wells. There have been a number of cases of bottled water companies' production affecting local communities' abilities to access their ground water (Clarke, 2005).

I would argue, however, that the problems caused by groundwater withdrawal are not problems of bottled water withdrawal, but caused by inadequacies in the laws that regulate the appropriation of groundwater in the United States. A pair of examples offers a useful illustration. In 1996, residents of Henderson County, Texas were unable to draw water from their wells when Ozarka Natural Springs Water Co. began pumping 90,000 gallons of groundwater a day from adjacent land. The case was brought before the Texas Supreme Court, which ruled that the taking of the water was acceptable because Texas follows the capture rule, which only restricts withdrawals of groundwater if the water is wasted (an extremely difficult thing to prove). Any impact on neighboring use of groundwater is irrelevant. This decision can be contrasted with a case in Sanctuary Springs, Michigan, where a group of concerned local activists opposed the building of a bottled water plant by Nestle. A court ruled that the amount of groundwater pumping by Nestle would exceed a reasonable use since it would affect local surface water (Gleick, 2010). In this case, the court applied a different standard than Texas, since Michigan's groundwater rule is reasonable use, rather than capture. Legal differences explain why one community was successful in preventing groundwater takings while the other was not. The problem in the case of water takings is not bottled water per se, but rather inadequate legal institutions protecting source water. The same problems could occur with groundwater used for fracking, brewing, or agriculture.

Another environmental concern is with the energy used in the production and distribution of bottled water. The production of bottles requires energy, and while the purified brands of bottled water are usually distributed within the state they are bottled in, more specialized brands require transportation across great distances, which uses additional energy. Gleick and Cooley (2009) estimated that in 2007 the total production

and distribution of bottled water required somewhere between 32 and 54 million barrels of oil. Additionally, PET, the plastic out of which bottled water containers are usually made, is primarily composed of petroleum Gitlitz & Franklin, 2007). In an era when the continued use of fossil fuels is a concern, the amount of energy involved in the production of bottled water is certainly an issue worthy of attention.

Relatedly, those who are concerned about the growth of bottled water consumption point to the waste caused by bottled water. While most bottles are recyclable, there is little indication that they are recycled at high rates. Gleick (2010) estimates that, at most, a quarter of the bottles are actually recycled, which is significantly lower than the recycling rates in the 1990s, and the recycled rate for bottled water is likely lower than the rates of other PET plastics products as well (Gitlitz & Franklin, 2007). Approximately 2 million tons of PET products are wasted instead of recycled each year in the United States alone, and 18 million barrels of crude oil were used in 2005 to replace the non-recycled bottles, enough oil to meet the total annual energy needs of over a million American households (Gitlitz & Franklin, 2007). Additionally, when not recycled, PET can cause major environmental problems. Incinerating PET bottled requires a great deal of energy consumption, and potentially leads to greenhouse gas emissions (Gironi & Piemonte, 2011; Gleick, 2010; Jungbluth, 2005). Even when not incinerated, PET can cause major issues. PET does not compost, and when stored in a landfill, PET degrades only 1% every 100 years (Gironi & Piemonte, 2011).

Jungbluth (2005) compared the environmental impact of bottled water versus tapped water using life cycle analysis. This technique involves investigating the cumulative energy consumption, climate change contribution, and pollutant contributions of bottled and tap water at the essential steps in production and disposal. Accounting for a number of possible variations, including refrigeration and carbonation, Jungbluth (2005) found that the environmental impact of consuming one liter of bottled water can be over a hundred times as high as consuming one liter of tap water.

There is little question that the production and distribution of bottled water, as well as the impact of plastic waste negatively impact the environment, and should concern anyone who is interested in the preservation of the public interest in a clean environment. Again, however, these issues may not be unique to bottled water. Any criticism that can be levied against bottled water on these grounds also applies wholly to plastic soft drinks, plastic sports drinks, and any other number of plastic products. This does not mean that the banning of plastic bottles in general would not be justified, or that more stringent actions could be taken to make sure they are properly recycled, but again that the criticism does not only apply to bottled water.

The final argument made by critics of bottled water is that it negatively impacts municipal tap water, both directly and indirectly (Clarke, 2005; Szasz, 2007; Wilk, 2006). The concern is that by framing bottled water as a clean and pure alternative, bottled water manufacturers undermine the trust that individuals have in their government's ability to provide them with a public service. In doing so, they actually undermine the ability of governments to provide the service by turning attention away from it. If citizens believe they have a safer alternative to tap water, they will be unlikely to push their municipality to improve it. This is not a problem unique to bottled water. Andrew Szasz (2007) argues that the increasing consumption of bottled water is actually typical of individuals moving away from public goods to private ones in order to provide

for their own safety, negatively impacting the public interest in some way. Similarly, Richard Wilk (2006) contends that the turn to bottled water is indicative of the growing contest for trust between government and corporations.

To this point, it seems that any concerns about bottled water are not really about bottled water at all, but either misguided or indicative of larger problems. Again, critics would likely suggest that the lack of uniqueness of the issues presented by bottled would does not mean regulation is unwarranted. I do not disagree. If we are to consider each of the issues on their own, however, the solution to the problems caused by bottled water would not be to craft policy dealing with bottled water, but rather to deal with the larger problems.

Policies that would deal with the larger issues would also help to alleviate the negative impact of bottled water, and they may certainly be justifiable. But when journalists, activists, and in the case of some cities around the country, politicians call for bans and taxes on bottled water, they are not concerned with broader issues; their concern is with bottled water specifically. What makes bottled water so concerning to so many is that it causes these environmental issues while being categorically no different than the far less damaging product it replaces. Bottled water, as Clarke (2005) puts it, involves turning water into water. As a product, it may be marginally different than the water that is drawn from the tap, but certainly it is not categorically different. In the process of bottling water, a commonly owned good is sold to consumers in a way that damages the public interest in a clean environment, and negatively affects a publicly supplied good, while simultaneously being less regulated than the publicly supplied good. While there are other goods that damage the public interest, bottled water is unique in that it does not provide anything that is significantly different than a readily available alternative. Many of the problems with bottled water can apply to bottled soft drinks, but soft drinks are categorically different from water. Using cars rather than public transit in a city may damage cause pollution, but cars are at least categorically different from the less damaging public transportation. To turn to David Chiu again, what made the ban in San Francisco justifiable was not just that bottled water is environmentally damaging, since that claim could be made about any number of products; it was that the damaging behavior made no sense when high quality water was readily available from the Hetch Hetchy reservoir. Why drink harmful bottled water when there is tap water to be consumed?

The Question of Coercion

It seems then, that bottled water consumption does harm the public interest, and the harm is unique. What is the legitimate government response to this harm? One of the fundamental cornerstones of liberal political thought is that government interventions that limit individual liberty should be avoided as much as possible (Cripps, 2011; Feinberg, 1987; Thaler and Sunstein, 2009). Perhaps the most famous articulation of the proper limits of government intervention into individual liberty is the harm principle, famously stated by John Stuart Mill. The harm principle suggests that government action limiting individual freedom is only justifiable when used to prevent those actions from harming others. As Mill (2003, p. 80) puts it, '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.' If our concern is the tension between individual freedom and the public interest in bottled water consumption, then understanding the implications of the harm principle for the regulation of bottled water would seem to be a good place to begin.

One of the major issues in applying the harm principle to the case of bottled water, however, is that Mill does not clearly define what constitutes a harm, meaning that an application of the harm principle in determining the proper scope of government action may greatly depend on how broadly one defines harm (Kernohan, 1993). In the case of bottled water, it is important to ask whether 'accumulative harm,' defined as 'a harm to another person brought about by the actions of a group of people where the action of no single member of that group is sufficient, by itself, to cause the harm,' can justify coercion to curb behavior (Kernohan, 1993, p. 51). The classic example of accumulative harm, first articulated by Feinberg (1987) is pollution. In many cases of pollution, the pollutants produced by a single individual are not enough to cause harm if isolated from the polluting actions of everyone else. It is only once a large number of individuals collectively pollute that there is enough pollution to cause harm to others.

Kernohan (1993) makes the case for an accumulative harm principle, where the government is justified in using coercive regulation in order to prevent accumulative harm. Kernohan (1993) argues that whether an individual action is harmful or not is largely a function of the circumstance in which the action is taken. In the same way 'shooting a rifle at a target is a totally harmless activity until someone wanders between the target and the shooter,' an individual polluter's action is not harmful unless it is taken in the context of other polluters (Kernohan, 1993, p. 62). This, along with the inability to identify the proximate cause of harm means that the government is justified in regulating all of the polluters who contribute to the harm. Recent arguments have applied similar theoretical rationale to the case of climate change, arguing that while each individual contribution of greenhouse gasses to climate change may be minimal, the collective harm is great, therefore justifying coercive action (Brooks, 2012; Cripps, 2011). It is simple to apply the accumulative harm principle to the case of bottled water, since it is in many ways a specific extension of the pollution case. A single individual consuming bottled water is unlikely to have a major impact on greenhouse gas emissions or pollution. When this individual behavior is put into the context of widespread bottled water consumption, however, the harms can be quite severe.

Given the negative effects of bottled water consumption on the shared environment, as well as the possibility that accumulative harm can be considered as justifying coercive government action, I would suggest that a strong case can be made that coercive policy to curb bottled water consumption, such as the bottled water ban in San Francisco, is normatively justifiable. Still, it is prudent to consider the possibility of less coercive options. Simply because bottled water consumption causes harm to others, does not mean coercion is ideal. In evaluating policy to curb bottled water consumption, it is questionable whether coercive measures aimed at constraining choice may be necessary, or even desirable, for the protection of the public interest. From both a normative and practical perspective, it may be better to embrace non-coercive options that embrace individual choice. Even if individual freedoms could justifiably be limited based on the accumulative harm caused by bottled water consumption, the liberal framework is fundamentally about limiting constraints on individual freedom (Cripps,

2011; Feinberg, 1987). If non-coercive policies could be just as effective in curbing harmful behavior, a commitment to liberal ideals means they should at least be considered. Indeed, Mill (2003) notes that there are cases in which it is best to avoid coercion when preventing harm, especially when the agent may act better when left to his own discretion.

Nudging Away from the Bottle?

Cass Sunstein and Richard Thaler's work on libertarian paternalism may provide some important insights into how we can choose policies that move individuals away from bottled water without using coercive actions. Sunstein and Thaler argue that rather than being a contradiction of terms, libertarian paternalism is a type of nonintrusive paternalism that attempts to influence people's behavior and lead them to decisions that are in their own best interest without constraining their choices (Sunstein & Thaler, 2003; Thaler & Sunstein, 2003). Rather than use coercive policies to force a certain choice, libertarian paternalism attempts to maintain freedom of choice, but nonetheless lead individuals to decisions that they would make if they had 'complete information, unlimited cognitive abilities, and no lack of self-control' (Sunstein & Thaler, 2003, p. 1162). Thaler and Sunstein (2009, p. 3) argue that by manipulating choice architecture, or 'the context in which people make decisions,' governments and private companies may 'nudge' individuals to make better decisions with minimal burden on individual liberty.

A familiar example of a nudge is the requirement that restaurants list calories on menus. This type of policy encourages individuals to eat healthier by providing information that they may not otherwise have, but does not *force* them to eat healthier. By simply showing individuals how their actions will impact their caloric intake, this 'nudge' helps individuals overcome their propensity to make poor decisions for their health (Thaler and Sunstein, 2009). This is in contrast to coercive actions like taxing high calorie options or requiring their removal entirely. The types of policies suggested by Sunstein and Thaler are paternalistic insofar as they attempt to move choices in welfare promoting directions, but they are not coercive since they do not use force to limit choices. The goal of libertarian paternalism is to endorse policies that improve individual decision-making instead of limiting it.

Sunstein and Thaler (2003) are primarily concerned with governmental (and private) policies that lead individuals towards their own welfare (understanding an improvement in individual welfare as making the choice that would be made with complete information and self-control). The primary concern with bottled water, however, is in understanding how to craft policies that lead individuals away from behaviors that harm others through accumulative harm. These are not contradictory goals. As will be shown, in the case of bottled water, the public and individual interest may not be in such great tension after all. As a supplement to libertarian paternalism, Sunstein and Thaler (2003) also introduce the concept of 'libertarian benevolence,' where non-coercive policies may be used to benefit someone or some group other than the person affected by the policy. By providing information about the benefits to others of a behavior, or by making the choice to be benevolent easier for an individual, libertarian benevolence does not force the individual to help others, but encourages them to do so.

In the case of bottled water, it is possible to explore policy options that may be described at libertarian paternalist and libertarian benevolent. Rather than constrain individual choice with coercive policies, these policies would embrace it by providing information, incentives, and options that lead individuals away from bottled water and towards individually *and* collectively beneficial behavior.

The Choice of the Bottle

In order to understand what types of policies can be used to nudge people away from bottled water consumption without using coercive government action, it is important to understand the reasons why individuals consume bottled water. One of the primary contributions made by Thaler and Sunstein (2009) in their development of the concept of libertarian paternalism is that a series of human flaws lead individuals to systematically act against their own self-interest. Many critics of bottled water are quick to dismiss the legitimacy of the choice of bottled water, since individuals are paying thousands of times the price for a less regulated product, often taken directly from the tap. Are individuals truly acting against their self-interest in choosing bottled water, and if so, how can that self-interest be turned away from bottled water and towards the tap? Studies have found that there are three major reasons individuals consume bottled water: 1) they believe that bottled water is safer than the water they get out of the tap; 2) they prefer the taste and smell of bottled water to tap water; or 3) they find it convenient. We should evaluate each of these reasons in turn.

Despite less stringent regulation, as well as the potential risk from PET, a number of studies have found that consumers consider bottled water to be safer than tap water (Doria, 2006; Hu, Morton, & Mahler, 2011; Huerta et al., 2012; Ward et al., 2009). The perceived safety advantages provided by bottled water is the main justification given for its consumption. Critics like Gleick (2010) and Clarke (2005) often attribute the public's belief in the safety of bottled water to the advertising campaigns of manufacturers. Importantly, however, research into consumer preferences for bottled water has revealed that the choice to consume bottled water is positively related to concern about local water conditions (Anadu & Harding, 2000; Hu et al., 2011; Huerta et al., 2012). It is not just the perceived health advantages of bottled water, but also a concern over tap water that leads individuals to consume bottled water. Perhaps most interestingly, Anadu and Harding (2000), in their study of four United States towns' consumption of bottled water, found that individuals in the town with an ongoing contamination problem were most likely to report high levels of bottled water consumption. It was not just a *perception* of poor tap water quality, but *actual contamination* of water that pushed them to the bottle.

Additionally, racial and ethnic minority populations tend to drink more bottled water than whites, a behavior that is typically attributed to minority groups' higher distrust of government services (Gorelick et al., 2011; Huerta et al., 2012). This distrust is perhaps not unreasonable. The water crisis in Flint, Michigan, a city with an approximately 55% black population, starkly illustrates the possibility that minority populations are receiving potentially dangerous municipal drinking water. In 2014, the city of Flint changed its primary source of drinking water from the Detroit water system to the Flint River. This switch resulted in the leaching of lead from aging pipes into the drinking water of much of the

majority black city's drinking water. In December 2016, another major contamination event occurred in Corpus Christi, Texas, a town with approximately 60% Hispanic population. A chemical leak in an industrial site led to residents being unable to use water for almost four days. The incident was only the most recent in a long series of drinking water issues in Corpus Christi, with the town having repeatedly violated the Safe Drinking Water Act in the years prior to the event (Switzer & Teodoro, 2017). Research has found that in the United States, Flint and Corpus Christi are not isolated cases. United States utilities serving higher populations of Hispanic and black residents commit far more violations of the Safe Drinking Water Act (Switzer & Teodoro, 2017). Given this, the finding that minority populations may wish to turn to bottled water rather than their tap should not be surprising, but it does show that individuals may not always be acting against their own welfare when they choose bottled water. Even though the quality and safety of tap water in the United States and other developed countries is exceptionally high overall, this is not true for all areas within those countries. Consuming bottled water may not be the best solution to this problem, because of the health and regulatory issues involved, but understanding that individual concern with the safety of tap water is the leading influence in the choice of bottled water is important for designing policies to nudge individuals away from its consumption.

The second major reason that individuals give for choosing to consume bottled water instead of tap water is taste and odor (Doria, 2006; Hu et al., 2011). The taste and smell of tap water can differ depending on the source, mineral content, and treatment techniques used. Consumers may dislike the taste of their local tap water, and prefer something different. Bottled water allows consumers to choose water that may be more pleasing to them. Dasani and Aquafina, the two largest 'purified' water brands, add a formula to all of their water to make water from taps around the country taste the same (Gleick, 2010). Mineral water may provide different tastes that are enjoyable for consumers, and in some cases provide a luxury alternative (Wilk, 2006). Individuals who choose bottled water for these reasons are not necessarily acting irrationally by paying more money for bottled water. While organoleptic reasons may not justify behavior that contravenes the public interest, understanding that they play a role in leading to those behaviors is important. Individuals are not necessarily acting against their self-interest in choosing bottled water; they are paying a premium for a product that they find more pleasing.

Finally, consumers drink bottled water because of convenience (Hu et al., 2011; Ward et al., 2009). While this reason is not found to be as important a consideration as health or taste, it is a common rationale for consumption. Ward et al. (2009) found that limited consumers of bottled water chose it when a tap alternative was not available, concluding 'it seems obvious that people who would normally drink tap water would be motivated to buy bottled water when tap water is unavailable.' From a self-interest perspective, we can again conclude that the individual behavior is not necessarily irrational. In the moment of choosing a bottle of water over a less convenient alternative, an individual is maximizing his or her personal utility. The choice of convenience is not the choice of an irrational individual, but rather a self-interested consumer, who finds the convenience of the bottle to be superior to either the inconvenience of finding a public tap, or choosing to not drink water at all.

Constraining or Embracing Individual Choice

Having reviewed the major reasons why individuals consume bottled water, I now turn to potential policies for curbing bottled water consumption. Many of the most common policy solutions that have been proposed/adopted are coercive in nature. They attempt to force change through policies that limit individual choice in some way. Although they vary in the level of coercion, they all use some form of government force to discourage bottled water consumption. There are a few coercive solutions available that would likely have some success in reducing bottled water consumption. Perhaps the least coercive option is a deposit-refund system. Many states have bottle bills that charge consumers a surcharge when they purchase recyclable goods, which is returned to them when they recycle the product. This is a common solution to the problem of waste, and can be an effective one, especially since it eliminates the need for monitoring and enforcement. Deposit-refund systems are coercive, however, and do impose a modest cost on individual choice through the initial deposit and the need for the consumer to return the bottle. A more stringent regulation would be a bottled water tax, like the one implemented in Chicago. A tax would charge consumers some amount of money for each purchase of bottled water they make in an attempt to curb consumption and raise public funds. Again, while the costs do not have to be prohibitive, the presence of a tax on bottled water would be an attempt to restrict behavior through coercion. It should be noted that while both deposit refund systems and bottled water taxes are coercive (if minimally), they are market-based policies. Both attempt to correct for the negative externalities caused by bottled water consumption (Pigou, 2013; Thaler and Sunstein, 2009).

Of course, the most obviously coercive policy option would be a ban on bottled water, either in a limited fashion, like the ban on the sale on public property in San Francisco, or a ban on all sales and consumption (excepting emergency situations like floods or hurricanes). Bans would be an obvious constraint on individual choice, but they perhaps may not be an effective constraint. In 2013, the University of Vermont banned the sale of bottled water on campus in an attempt to cut down on waste from plastic bottles. The impact of the ban was surprising. Instead of students turning towards tap water when the option of bottled water was removed, the ban had the unintended consequence of increasing the consumption of unhealthy bottled beverages, such as sodas (Berman & Johnson, 2015). In fact, the total number of plastic bottles shipped to the campus increased in the semesters following the ban. While we should be careful about extrapolating the effects of a bottled water ban on a single university campus to all contexts, these findings certainly cast some serious doubt on the effectiveness of banning individual choice in the case of bottled water consumption.

Coercion, however, is not the only option available to governments who wish to curb bottled water consumption. There are also policies available that aim at the reduction of consumption while maintaining individual choice rather than constraining it. Once again considering the reasons why people consume bottled water, I turn to a number of policy alternatives that work towards embracing those reasons rather than frustrating them.

First, we can consider the most common reason given for choosing bottled water: its perceived safety. While those who are most exposed to risks are more likely to consume bottled water, the sense that bottled water is safer in general is lacking merit. As noted

earlier, bottled water is less regulated than tap water, and studies have shown that there are concerns with bottled water contamination. In developed countries, there is little reason to trust the safety of the bottle more than the tap. With this in mind, it is possible to understand the individual choice of the bottle as a problem of incomplete information. One of the major reasons why libertarian paternalism is necessary in many cases, according to Sunstein and Thaler (2003) is that individuals lack information about the alternatives available to them. Without complete information, consumers are often unable to understand how the decisions they make over a set of choice alternatives will impact their welfare (Thaler and Sunstein, 2009). In the case of bottled water consumption, individuals believe they are making the best choice for their welfare because they lack knowledge about the relative risks of their choices between bottled and tap water. Strategies that focus on filling this knowledge gap would allow consumers to make informed decisions about their water consumption and rely on individual choice to take them away from the bottle.

One such strategy would be to make information about bottled water more easily accessible. Clearer labeling of bottled water contents and sources would allow for consumers to know what goes into their bottles, especially in the cases of the 'purified' water brands that are just filtered tap water. Additionally, the reporting systems for bottled water contamination could be improved. When tap water is contaminated, utilities are required to report this to government officials and publicize the contamination. In some sense, by being diligent in the monitoring and reporting of risks, public water systems are putting themselves at a disadvantage in comparison with bottled water. People are made aware of contamination in their tap water in a way that they are not with bottled water, and as Anadu and Harding (2000) show, this leads to them away from tap water. A regulatory regime in this case would reduce informational asymmetries between producers and consumers of bottled water in a way that mirrors how utilities are required to provide information about tap water. This type of informational regulation is strongly advocated by Thaler and Sunstein (2009) in a number of policy areas. It imposes very little cost on industry, while providing invaluable information to allow consumers to make better choices. Such a policy would make the individuals more aware of the benefits and risks of each of their options, allowing them to more clearly map their decision over beverage options onto their welfare.

If individuals choose the bottle because they believe it is safer, providing information is not the only strategy that could turn them away from bottled water. Actual improvements in the safety of municipal water would increase trust in the service and draw people back to tap water. Updating infrastructure at older systems would encourage individuals to drink tap water through increased consumer confidence. As noted, it is in the communities most at risk of tap water contamination that bottled water consumption is most common. By fixing the problems with tap water, individuals would be less likely to consume bottled water. Of course, it could be argued that the funding for these improvements would have to come from somewhere, necessitating some form of public funding, likely through higher rates for drinking water. Relevant to this possibility is the fact that most utilities in the United States actually charge less for water than what it costs to distribute the water to customers and maintain and update infrastructure (Levin et al., 2002). Simply charging full cost to consumers for their usage could hardly be considered coercive. Even at full cost, it should be noted, tap water would still be

significantly cheaper than bottled water. Additionally, public officials proactively publicizing the safety of tap water could help turn citizens away from the bottle. Indeed, a number of municipal utilities have attempted to bottle their own water as a way of showing it is just as good as commercially sold water (Hartzell, 2005), although this is hardly a long term solution to the issue of environmental degradation caused by plastic bottles. Still, by providing a safer alternative, and by making citizens aware of its safety, governments would be maintaining individual liberty without using coercion. Any number of non-coercive alternatives could be considered, but it should be recognized that since individuals choose bottled water because of its perceived safety advantages, it is possible to craft nudges to move them away from the bottle that embrace the very reason for that choice.

The second reason for consuming bottled water, preferences regarding odor and taste, can also be considered when choosing policy alternatives. Improving infrastructure and decontamination for safety reasons would also improve the taste of tap water, but other strategies could be adopted as well. There are now a number of technologies that would allow for better tasting water from water fountains, and governments could install these new systems. Indeed, on many college campuses, newer water fountains have filtration systems that help with the odor and taste of water. These water fountains are put in direct contrast with bottled water, as there is a display showing the number of bottles that have been avoided by individuals choosing to drink from the water fountain rather than bottled water. This is another type of informational nudge. Thaler and Sunstein (2009) have noted that one of the major reasons individuals make decisions that negatively impact the environment is that they lack good feedback on how their decisions are related to environmental impacts. This type of feedback strategy is indicative of choosing to embrace rather than constrain choice. By improving the taste of the tap water through filtration and framing the decision to drink from the fountain as a contrast with bottled water, these fountains do not attempt to curb bottled water consumption by preventing people from drinking it, but rather by encouraging people to drink from fountains.

Another possibility would be to encourage or even subsidize the installation of home filtration systems.[3] Although these systems can cause health problems if not properly maintained, when correctly used they can remove the taste and odor of local water at a fraction of the cost of bottled water. Monetarily incentivizing individuals to install their own filtration systems that will make their water taste better may turn consumption away from environmentally damaging bottled water. While the money for these subsidies would have to come from somewhere, the costs are likely to be low compared to the savings from the avoided pollution. Again, considering how individuals choose water for taste and odor reasons shows how embracing choice rather than constraining it can lead to the desirable outcome in terms of the public interest.

Finally, responding to consumer demand for convenient water options is perhaps the simplest way to address the motivating reasons for consuming bottled water, since a preference for the convenience of bottled water can in part be explained by the lack of convenience of the alternative: the tap. Access to high quality tap water could be made more convenient through a number of policies, which would make bottled water less desirable. Portable, reusable bottles often provide just as much convenience as recyclable bottles, but at a fraction of the cost. Governments could do much more to help

individuals realize the convenience of reusable bottles. For one, a government could provide a free bottle to all of its citizens, ensuring that all individuals at least have access to a reusable alternative to the plastic bottle. Additionally, the government could incentivize using reusable bottles at public events or attractions by creating discount programs that reduce the cost of entry for those who bring their own bottles.

Perhaps the best way to embrace individuals' preference for convenience in the case of water consumption is to ensure that there are an adequate number of available water fountains. Gleick (2010) brings up the example of the 45,000 person University of Central Florida stadium, which opened in 2007 without a single fountain in the stadium, taking for granted that all of the individuals would be served by plastic bottles. While drinking fountains were later added, in this case it was completely inconvenient to drink anything but bottled water. Local building codes often require that water fountains be included in construction, but that is not true everywhere. By making sure that all buildings have a certain number of water fountains, the comparative convenience advantage of bottled water will be mitigated. Additionally, by including fountains that allow for the easy fill up of portable bottles, it would become extremely convenient for individuals to bring their own portable bottle rather than purchase bottled water.

The policy alternatives outlined above are just a handful of those available, but they illustrate the major argument made here: that constraining choice is not the only – and often not the best – option when it comes to stopping individual behavior that is against the public interest. Embracing choice by nudging individuals away from bottled water and towards tapped water may avoid the tension between individual freedom and the public interest that often underlies environmental controversies. Coercive action against bottled water may not be the only way to stop its consumption.

Conclusion

Bottled water is a classic illustration of the tension between individual freedom and the public interest in a healthy environment. When individuals consume bottled water, they are participating in a process that negatively impacts the public interest by causing harm to other individuals through environmental degradation. Bottled consumption pollutes landfills, consumes energy, and produces greenhouse gas emissions. The question is what to do about these problems. Recent bans on bottled water have seemed to follow Hardin's strategy of constraining individual choice. But other, non-coercive options are available. In this paper, I have attempted to show that in the case of bottled water, individual choice and the public interest do not have to be in tension. Policy can embrace choice in the goal of improving the public interest by focusing on the reasons why individuals choose their environmentally destructive individual behavior.

Notes

1. The analysis here mainly focuses on the US, but the arguments could be extended to include other developed nations with safe drinking water. The issues caused by a lack of safe and dependable drinking water in developing countries around the world makes the discussion of bottled water consumption in those countries a different case. Additionally,

the existence natural disasters mean bottled water will always retain a place as an emergency item, but the paper deals with everyday consumption, not extraordinary events.

2. Some clarification of terms should prove useful here. When I refer to the public interest in a clean environment, I specifically refer to the public interest in preventing the harm to individuals that results from environmental degradation. Pollution can cause major health risks, and climate change can cause major harm to property and lives through rising sea levels and increased extreme weather. Since bottled water may contribute to environmental degradation, it potentially harms individuals, and is therefore against the public interest. With respect to freedom of choice and individual liberty, I am referring to classical liberal ideas of individuals as being sovereign over their own decisions. In decisions that concern themselves, individuals should be free to make whatever choices they see fit (de Tocqueville, 1980; Von Mises, 1979).
3. Many of the policy proposals discussed here, including subsidizing filtration system installation would perhaps be opposed on the grounds that they would require some government funding, and the funding would have to come from somewhere. This is certainly an important, but answerable point. While these programs would impose some minimal costs citizens, it is likely to be significantly less than the costs required for mitigating the environmental degradation caused by increasing bottled water consumption. The short-term costs are likely worth the avoidance of larger costs later on.

References

Anadu, E., & Harding, A. K. (2000). Risk perception and bottled water use. *Journal of the American Water Works Association*, *92*(11), 82–92.

Bakker, K. (2010). *Privatizing water: Governance failure and the world's urban water crisis*. Ithica: Cornell University Press.

Barlow, M., & Clarke, T. (2002). *Blue gold: The fight to stop the corporate theft of the world's water*. New York: The New Press.

Berman, E., & Johnson, R. K. (2015). The unintended consequences of changes in beverage options and the removal of bottled water on a university campus. *American Journal of Public Health*, *105*(7), 1404–1408.

Breyer, S. G. (2009). *Regulation and its reform*. Cambridge: Harvard University Press.

Brooks, T. (2012). Climate change and negative duties. *Politics*, *32*(1), 1–9.

Clarke, T. (2005). *Inside the bottle: Exposing the bottled water industry*. Ottawa: Polaris Institute.

Cripps, E. (2011). Climate change, collective harm and legitimate coercion. *Critical Review of International Social and Political Philosophy*, *14*(2), 171–193.

de Tocqueville, A. (1980). *On democracy, revolution, and society*. Chicago: The University of Chicago Press.

Doria, M. F. (2006). Bottled water versus tap water: Understanding consumers' preferences. *Journal of Water and Health*, *4*(2), 271–276.

Feinberg, J. (1987). *Harm to others: The moral limits of the criminal law, vol. 1*. Oxford: Oxford University Press.

Gironi, F., & Piemonte, V. (2011). Life cycle assessment of polylactic acid and polyethylene terephthalate bottles for drinking water. *Environmental Progress & Sustainable Energy*, *30*(3), 459–468.

Gitlitz, J., & Franklin, P. (2007). Water, Water Everywhere: The Growth of Non-Carbonated Beverages in the United States. Culver City, CA: Container Recycling Institute.

Gleick, P. H. (1998). The human right to water. *Water Policy*, *1*(5), 487–503.

Gleick, P. H. (2010). *Bottled and sold: The story behind our obsession with bottled water*. Washington D.C.: Island Press.

Gleick, P. H., & Cooley, H. S. (2009). Energy implications of bottled water. *Environmental Research Letters*, *4*(1), 014009.

Gorelick, M. H., Gould L., Nimmer M., Wagner D., Heath M., Bashir H., & Brousseau D. C. (2011). Perceptions about water and increased use of bottled water in minority children. *Archives of Pediatrics and Adolescent Medicine*, *165*(10), 928–932.

Hardin, G. (1968). The tragedy of the commons. *Science*, *162*(3859), 1243–1248.

Hartzell, J. (2005, May 22). State utilities sell bottled tap water: Municipalities say their water is as good as the commercial product. *Madison*.com. Retrieved from http://host.madison.com/news/local/state-utilities-sell-bottled-tap-water-municipalities-say-their-water/article_f8812cb9-2bb3-58f4-90ad-017da31d8473.html

Hu, Z., Morton, L. W., & Mahler, R. (2011). Bottled water: United States consumers and their perceptions of water quality. *International Journal of Environmental Research and Public Health*, *8*(2), 565–578.

Huerta-Saenz, L., Irigoyen, M., Benavides, J., and Mendoza, M. (2012). Tap or bottled water: drinking preferences among urban minority children and adolescents. *Journal of Community Health*, *37* (1), 54–58.

Ikem, A., Odueyungbo S., Egiebor N.O., & Nyavor K. (2002). Chemical quality of bottled waters from three cities in Eastern Alabama. *Science of the Total Environment*, *285*(1), 165–175.

Jungbluth, N. (2005). *Comparison of the environmental impact of tap water vs. Bottled mineral water*. Swiss Gas and Water Association.Switzerland: Uster.

Kernohan, A. (1993). Accumulative harms and the interpretation of the harm principle. *Social Theory and Practice*, *19*(1), 51–72.

Levin, R. B., Epstein, P. R., Ford, T. E., Harrington, W., Olson, E., & Reichard, E. G. (2002). US drinking water challenges in the twenty-first century. *Environmental Health Perspectives*, *110*(1), 43–52.

Mill, J. S. (2003). *On liberty*. New Haven: Yale University Press.

Olson, E. D. (1999). *Bottled water: Pure drink or pure hype*. New York, NY: National Resource Defense Council.

Pigou, A. C. (2013). *The economics of welfare*. London: Palgrave Macmillan.

Pip, E. (2000). Survey of drinking water available in Manitoba, Canada. *Environmental Health Perspectives*, *108*(9), 863–866.

Risse, M. (2014). The human right to water and common ownership of the earth. *Journal of Political Philosophy*, *22*(2), 178–203.

Sabatini, J. (2013, December 12). Supervisor proposal seeks to ban plastic water bottle sales on SF property. *San Francisco Examiner*. Retrieved from http://www.sfexaminer.com/sanfrancisco/supervisor-proposal-seeks-to-ban-plastic-water-bottle-sales-on-sf-property/Content?oid=2647698

Sunstein, C. R., & Thaler, R. H. (2003). Libertarian paternalism is not an Oxymoron. *The University of Chicago Law Review*, *70*(4), 1159–1202.

Switzer, D., & Teodoro, M. P. (2017). The color of drinking water: Class, race, ethnicity, and safe drinking water act compliance. *Journal-American Water Works Association*, *109*(9), 40–45.

Szasz, A. (2007). *Shopping our way to safety*. Minneapolis: University of Minnesota Press.

Thaler, R. H. & C. R. Sunstein (2009). *Nudge: Improving decisions about health, wealth, and happiness*. New York: Penguin Books, 2009. and Sunstein.

Thaler, R. H., & Sunstein, C. R. (2003). Libertarian paternalism. *The American Economic Review*, *92*(2), 175–179.

Timm, J. C. (2014, March 3). San Francisco bans the sale of plastic water bottles on city property." *MSNBC*. Retrieved from http://www.msnbc.com/msnbc/san-francisco-bans-sale-plastic-water-bottles-climate-change

Vanderheiden, S. (2006). Assessing the case against the SUV. *Environmental Politics*, *15*(1), 23–40.

Von Mises, L. (1979). *Economic policy: Thoughts for today and tomorrow*. Chicago: Gateway, Inc.

Warburton, D., Harrison B., Crawford C., Foster R., Fox C., Gour L., & Krol P. (1998). A further review of the microbiological quality of bottled water sold in Canada: 1992–1997. *International Journal of Food Microbiology*, *39*(3), 221–226.

Ward, L. A., Cain, O. L., Mullally R. A., Holliday, K. S., Wernham, A. G. H., Baillie P. D., & Greenfield S. M. (2009). Health beliefs about bottled water: A qualitative study. *BMC Public Health*, *9*(1), 196.

Westerhoff, P., Prapaipong, P., Shock, E., & Hillaireau, A. (2008). Antimony leaching from polyethylene terephthalate (PET) plastic used for bottled drinking water. *Water Research*, *42*(3), 551–556.

Wilk, R. (2006). Bottled water in the age of branding. *Journal of Consumer Culture*, *6*(3), 303–325.

Williams, M. (2007). Privatization and the human right to water: Challenges for the new century. *Michigan Journal of International Law*, *28*, 469.

da Silva, M. E. Z., Santana, R. G., Guilhermetti, M., Filho, I. C., Endo, E. H., Ueda-Nakamura, T., … Filho, B. P. D. (2008). Comparison of the bacteriological quality of tap water and bottled mineral water. *International Journal of Hygiene and Environmental Health*, *211*(5), 504–509.