

Sugar-Sweetened Beverages: Portions and Tax Policies

Public Health and Legal Arguments in Favor of a Policy to Cap the Portion Sizes of Sugar-Sweetened Beverages

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In 2012, the New York City Board of Health passed a regulation prohibiting the sale of sugar-sweetened beverages in containers above 16 ounces in the city's food service establishments. The beverage industry and various retailers sued the city to prevent enforcement of the law, arguing that the board had overstepped its authority. In June 2014, the state's highest court agreed and struck down the regulation.

Here we report the results of a content analysis of the public testimony related to the case submitted to the New York City Department of Mental Health and Hygiene. We identified major arguments in support of and against the sugar-sweetened beverage portion limit policy.

We offer legal and scientific arguments that challenge the major anti-policy arguments and contend that, although this policy was not implemented in New York City, it can be legally pursued by other legislatures. (*Am J Public Health*. 2015;105: 2183–2190. doi:10.2105/AJPH. 2015.302862)

RESEARCH HAS LINKED

sugar-sweetened beverage (SSB) intake with weight gain, obesity, type 2 diabetes, and tooth decay.¹⁻⁶ This has prompted policymakers to pursue interventions such as public service campaigns,⁷ taxes,^{8,9} and restriction of sales on government property¹⁰ and during the school day¹¹ to curb SSB intake. In September 2012, New York City (NYC) passed a controversial regulation prohibiting the sale of SSBs in containers above 16 ounces in the city's "food service establishments,"12,13 including restaurants, mobile food vendors, stadium and movie theater concessions, and delis and small grocers where ready-to-eat foods account for more than 50% of annual sales. Free refills were permitted.12

The city's ordinance defined SSBs as nonalcoholic beverages that have added sugar or another caloric sweetener, have more than 25 calories per 8 fluid ounces, and contain less than 50% of milk or milk substitute by volume. Drinks sweetened artificially (e.g., diet beverages), fruit or vegetable juices without added sugar, unsweetened coffees and teas, water, and beverages with a milk content above 50% were not subject to the policy.^{12,13}

The SSB policy was proposed by the NYC Department of Health and Mental Hygiene, an administrative agency in the executive branch of the city government that regulates food service establishments, and adopted by the NYC Board of Health. Supermarkets, grocers, and convenience stores were not among the covered establishments¹³ because the city does not have authority over them; they are regulated by the New York State Department of Agriculture and Markets. Businesses, community organizations, and the beverage industry sued NYC to prevent enforcement of the regulation. Two lower courts ruled against the city and, in June 2014, the New York Court of Appeals struck down the law.¹⁴

Our aim was to identify common arguments made in favor of and against the SSB portion limit policy through a content analysis of all written and spoken public testimony submitted to the NYC Department of Health and Mental Hygiene. Here we present legal and scientific arguments that challenge the major anti-policy arguments identified in the testimony. We also explain the NYC litigation arguments against the policy so that jurisdictions considering a similar law can avoid similar legal challenges. Finally, we discuss the limitations of the portion limit policy and possible negative, unintended consequences that should be considered and studied.

DATA COLLECTION

All 53 oral comments and 38 648 written pieces of testimony associated with the case were obtained from the NYC Department of Health and Mental Hygiene. Results are presented for the 411 unique written and 50 oral testimony submissions. American Beverage Association testimony was coded separately (excluding the appendix) because of its length (65 pages vs 1–2 pages for most other testimony) and the organization's unique interest in seeing the policy defeated.

Two trained coders used a codebook to identify the author or source of each piece of testimony, whether arguments were in favor of or against the portion limit policy, the type of argument made, and whether the submission was overall pro- or anti-policy. A random subsample of 10% of the submissions were double coded,¹⁵ and Cohen κ (interrater reliability) ranged from 0.71 to 1.00.



FNDINGS

We identified 217 (47.1%) propolicy, 234 (50.8%) anti-policy, and 10 (2.2%) neutral unique comments. Table 1 displays the breakdown of testimony sources. Half of the testimony was provided by members of the general public, with 40% supporting the policy. These findings are consistent with a Gallup poll¹⁶ reporting that 69% of Americans opposed the policy. One quarter of the testimony was submitted by health professionals who were largely in favor of the policy; business representatives largely opposed the policy, as did the majority of government officials (although very few submitted testimony).

Tables 2 and 3 summarize the types of arguments across 7 antipolicy and 8 pro-policy themes and the percentages of testimony containing each argument at least once. This analysis is limited because we included arguments from public testimony but not from media reports. Nonetheless, we believe that our empirical approach to identifying arguments is likely to have generated the most common anti-policy arguments legislatures could expect to face if they pursue the policy.

NEW YORK CITY LITIGATION

Broadly, there were 2 legal issues under consideration in the NYC lawsuit.^{14,17} The plaintiffs argued, and the trial court found that, first NYC's Board of Health impermissibly acted in a legislative capacity, violating the separation of powers doctrine, and second the ordinance was not rational but rather was arbitrary and capricious owing to "loopholes inherent in the rule."¹⁷ Both the appellate court and the New York Court of Appeals affirmed the first part of the lower court's ruling only, finding that the Board of Health acted in excess of its legislative delegation.14,18

Although this decision applies in New York State only, all health agencies can act solely within their specific grant of authority (through the state constitution, specific legislation, or both).¹⁹ Prior to pursuing such a regulation, health boards or public health commissions should work with local legal counsel to ensure that their authority is broad enough to allow enactment of a serving size restriction. However, given the difficulty faced in the NYC case, our subsequent discussion anticipates that a state or local legislature or tribal government would pass a portion cap restriction. Had the NYC council passed the ordinance, there would not have been a viable separation of power challenge. In addition, the higher courts did not find that enacting a portion cap to address obesity is irrational. It is rare for courts to find health and safety laws arbitrary and capricious, but this may occur when a government entity does not adequately explain or provide a reasoned analysis for its action.²⁰

In the NYC case, the plaintiffs argued that the regulation was irrational because it applied to food service establishments but not stores such as 7-Eleven, the purveyor of the Big Gulp. The reason was that the Department of Health and Mental Hygiene had authority only over food service establishments. To avoid irrationality arguments, governments considering a similar restriction should apply the law to all establishments that sell ready-to-drink large beverages (as opposed to supermarkets that sell SSBs in resealable containers).

POLICY THEMES

The following anti-policy themes emerged, and are presented with their pro-policy responses.

Theme 1

Anti-policy argument. State and local governments do not have the authority to enact a serving size restriction.

Pro-policy response. State legislatures possess "police power" authority to enact laws to protect, preserve, and promote the health, safety, and welfare of their population.²¹ This authority affords the government discretion to determine methods of regulating injurious and unhealthy practices to protect the common good.²² Therefore, except as restricted by the US Constitution, states can use police power authority to benefit population interests over personal interests as long as they do not do so in an arbitrary or unreasonable manner.²³ Common examples include ordinances related to sanitation, safety, and zoning. States delegate police power to their local governments to varying degrees. When states and locales use police power to regulate the sale of products to protect public health, such regulations are subject to a "rational basis" inquiry by courts.^{23,24} Under this test, a restriction on the sale of products is presumed to be constitutional if it rests on a rational basis within the knowledge and expertise of the government body.²⁵

TABLE 1—Public Testimony Sources and Policy Stances Related to the Sugar-Sweetened Beverage Portion-Cap Policy in New York City, 2012

Source Type	Total, No. (%)	Pro-Policy, No. (%)	Anti-Policy, No. (%)	Neutral, No. (%)
Member of the general public	219 (47.5)	78 (35.6)	133 (60.7)	8 (3.7)
Medical/health professional	124 (26.9)	116 (93.5)	7 (5.6)	1 (0.8)
No source noted	48 (10.4)	11 (22.9)	37 (77.1)	0 (0.0)
Restaurant/other business owner	27 (5.9)	6 (22.2)	20 (74.1)	1 (3.7)
Beverage/restaurant/movie theater industry representative	23 (5.0)	1 (4.3)	22 (95.7)	0 (0.0)
Government official	17 (3.7)	4 (23.5)	13 (76.5)	0 (0.0)
Lawyer	3 (0.7)	1 (33.3)	2 (66.7)	0 (0.0)



TABLE 2-Most Common Arguments Against New York City's SSB Portion Cap Policy in 461 Public Testimony Submissions

Argument	No. of Times Argument Appeared in General Testimony (%)	No. of Times Argument Appeared in American Beverage Association Testimony (%)
Sugar-sweetened beverages are not the appropriate target for intervention: e.g., SSBs are not responsible or solely responsible for obesity; obesity has multiple determinants; the policy is arbitrary (i.e., why target SSBs and not alcohol or other foods?); SSBs are not addictive, unlike tobacco; we should focus on nutrition education or exercise instead; it will be more difficult to pass other public health regulations afterward	250 (54.2)	64 (28.8)
The policy represents government intrusion on freedom: e.g., the policy infringes on Americans' rights, people can make their own dietary decisions, what will the government regulate next?	242 (52.5)	27 (12.2)
The policy will not work: e.g., there is no evidence the policy will change consumer behavior or affect obesity, similar policies have failed; the policy will not be effective because it targets only a small number of food establishments serving SSBs, there will be unintended consequences (e.g., people will switch to other beverages such as alcohol), people can find ways around the policy (e.g., they can buy multiple SSBs), we should do something more aggressive (e.g., taxes, zoning laws)	144 (31.2)	54 (24.3)
The policy is unfair and will hurt businesses: e.g., the policy will make doing business in New York City more difficult for restaurants, the policy is unfair because it targets restaurants but not convenience stores, the policy favors large corporations over small businesses; it will be costly to repackage beverages, the policy will create operational problems for restaurants (e.g., they can no longer use self-serve 16-oz containers even if customers intend to use them for non-SSBs)	138 (29.9)	13 (5.9)
The policy will hurt certain groups: e.g., the policy disadvantages low-income families who share large SSBs to save money	38 (8.2)	5 (2.3)
State and local governments do not have the authority to enact the policy, or people do not want the policy: e.g., the policy was passed by a select few, the city council should have voted on it, the mayor does whatever he wants, most New Yorkers do not want it, there are other legal arguments opposing the law (i.e., interstate commerce law/commerce clause violation, substantive due process violation)	32 (6.9)	58 (26.1)
There is no public health need for the policy: e.g., the beverage industry has already taken steps to make consumers healthy (e.g., placing calorie labels on SSB containers), obesity has leveled off, SSB consumption is declining, few people drink SSBs	14 (3.0)	1 (0.5)
Other	14 (3.1)	0 (0.0)

Note. SSB = sugar-sweetened beverage.

In several cases during the early part of the 20th century, the Supreme Court upheld against legal challenge cities' and states' ability to enact laws with respect to the weight, measurement, quality, or ingredients of food as a valid and "common exercise of the police power."²⁴ These laws were generally enacted to prevent fraud or to protect public health at a time when purity of ingredients was an issue.^{23,24,26} For example, the Supreme Court upheld states' statutes prohibiting the sale of ice cream containing less than a fixed percentage of butter fat as a valid exercise of state police power.²⁴

Today, the primary public health challenge in the United States is chronic disease resulting from overconsumption of unhealthy products, including SSBs. Although the states' underlying interests differ, their ability to use police power to address public health remains beyond reproach.²² In one 1916 case, a North Dakota statute required lard to be sold in specifically sized containers despite the fact that businesses wanted to offer



TABLE 3—Most Common Arguments in Favor of New York City's SSB Portion Cap Policy in 461 Public Testimony Submissions

Obesity is a major public health problem (or is costly) and must be addressed: e.g., this generation of children will die before	191 (41.4)
their parents, the government must step in because obesity is costly for everyone	
SSBs (or sugar) are a key target for intervention: e.g., of all foods and beverages, SSBs are a contributor/the single greatest contributor	187 (40.6)
to obesity; consumption of SSBs/sugar is related to diabetes, dental problems, etc.; SSBs are the single most important source of excess	
calories leading to weight gain; the human body does not recognize excess calories from sugar in liquid form; humans do not compensate	
later for liquid calories the way they do with food; children/adolescents are consuming SSBs in large amounts; SSBs and sugar are	
addictive; SSBs are 100% empty calories	
The government has a responsibility to protect public health: e.g., it is the responsibility of the government to prevent disease/protect the	155 (33.6)
public's health, the government should/needs to do something about obesity, the policy is within the government's jurisdiction/purview	
Portion sizes are too big/reducing portion sizes is a key intervention: e.g., SSB portion sizes are excessively large, large servings are not safe,	129 (28.0)
portion sizes have not always been this large, people consume more when given larger portions, the food industry has encouraged	
overconsumption by providing large portion sizes, the policy will help shift norms about reasonable portion sizes, the policy is needed to	
counter industry efforts to promote SSBs, customers want and are satisfied with smaller portion sizes	
We have to start somewhere: e.g., policy change is incremental, the policy is a long-needed wake-up call, the policy sparks public	77 (16.7)
debate about obesity/eating habits	
The policy is a good step, and we need to do more: e.g., regulation was supported, but more needs to be done (e.g., taxing SSBs)	64 (13.9)
The policy will improve public health and reduce obesity: e.g., education campaigns are not as effective as limits/bans,	60 (13.0)
other public health measures have been effective (e.g., fluoride, indoor smoking laws), such regulations will be effective because	
people are influenced by default options/smaller portion sizes	
The policy will help (or will not harm) certain groups: e.g., people have other beverage options, including water; obesity disproportionately	49 (10.6)
affects those with lower incomes and those from certain racial/ethnic groups; companies are targeting sales of cheap, nonnutritive	
SSBs to low-income people	
Other	13 (2.8)

smaller-sized containers than permitted under the statute.²⁶ The Supreme Court upheld the law as a valid exercise of the state's police power to regulate honest weights and measures.²⁶ In the case of SSBs, states would be prescribing the standard container size of beverages instead of lard, employing a different but longaccepted justification for use of their police power: public health.²² Addressing a known public health concern, such as overconsumption of SSBs, is rational. Regulating businesses by

prescribing the standard size of beverages permissible for sale in a jurisdiction is a reasonable means to further this objective and a proper use of a state's police power.

Theme 2

Anti-policy argument. The SSB portion limit policy infringes on personal liberties; dietary decisions are a matter of personal preference and choice.

Pro-policy response. The perception that consumers are completely in control of their dietary decisions fails to recognize that food choices are influenced by forces out of their control.²⁷ Food marketing, restaurant menu designs, supermarket displays, container serving sizes, pricing, and other point-of-purchase promotional strategies influence people's decisions about what and how much to eat.27 SSBs in particular are widely available in restaurants, convenience stores, and vending machines and are prominently displayed in supermarket checkout aisles and end caps.²⁸ They are convenient to consume and

carry, and although many people prefer smaller portion sizes at restaurants,²⁹ there is little incentive for restaurants to reduce portion sizes. This is especially true for beverages because companies make greater profits by offering lower unit prices for larger volumes.28

The SSB portion limit policy is innovative because it addresses large portion sizes, an important contributor to overeating, 30-32 while preserving freedom of choice. Although the policy caps the serving size at 16 ounces,



customers can purchase (and consume) as many drinks as they like and businesses retain the right to sell the same volume of SSBs in multiple containers. Those consumers intent on drinking more than 16 ounces of an SSB still have the freedom to do so; the serving size restriction simply changes the default, promoting less consumption.

Although we have argued that freedom of choice is preserved, members of the public may not perceive it that way. If that is the case, the policy could do harm by increasing the public's perception that it represents a slippery slope of government encroachment on freedom. Indeed, this was one of the most common anti-policy arguments raised. If this were to happen, the policy could unintentionally erode the public's respect for and cooperation with public health agencies, which could in turn undermine public health efforts in other arenas such as vaccination and quarantine efforts. This suggests a need for research on public perceptions of such policies and efforts to communicate with the public prior to policy implementation.

Legally, complaints that the regulation infringes on the population's "liberty" are arguments akin to a substantive due process claim, which requires the government to justify deprivations of life, liberty, or property.²¹ However, not every government deprivation rises to the level of a constitutional violation; only those that infringe on fundamental rights (e.g., the right to privacy) or enumerated freedoms in the Constitution (e.g., the freedom of religion) are categorized as such violations. There is no such right or freedom to purchase large portions of SSBs. There is thus not a valid due process claim when the government regulates basic aspects of business practices.^{23,33}

Theme 3

Anti-policy argument. Targeting only SSBs, and not other foods or beverages, is unfair. SSBs are not the only product whose overconsumption leads to weight gain or health problems.

Pro-policy response. Obesity is a problem with many determining factors, and its cause cannot be solely linked to overconsumption of a single food or beverage. However, there are several science-based reasons to target SSB consumption specifically. First, research links SSBs with weight gain, obesity, type 2 diabetes, and dental caries, more so than with any other food or beverage at this point.²⁻⁶ Second, many SSBs have little nutritional value. In the case of the vast majority of these beverages, the calories come either entirely or largely from added sugars. Third, some studies have shown that individuals may fail to compensate for liquid calories the way they do for solid calories, by reducing intake at subsequent meals.³⁴

Legally, complaints that the regulation unreasonably targets SSBs and not other foods or beverages are reminiscent of claims that the policy violates notions of equal protection. Because regulation of product sales need only meet the rational basis standard, an equal protection violation will be found only if there was no evidence before the governing body to support its decision.³⁵ Because the evidence reasonably supports the classification, there is not an equal protection violation. The Supreme Court has upheld similar ordinances in the face of equal protection challenges such as North Dakota's regulation of the permissible size of lard containers, but not butter,26 and Minnesota's ban on one type of milk container deemed to cause environmental problems but not other types of milk containers.³⁵ In the case of SSBs, proponents have strong evidence to support the rationality of the classification.

Theme 4

Anti-policy argument. The SSB portion limit policy will not improve people's diets or reduce obesity. The policy has no scientific basis, and people can get around it by refilling their drinks or buying multiple beverages.

Pro-policy response. The SSB portion limit policy is designed to reduce SSB consumption as a means of improving the population's diet. Proponents do not argue that it will solve obesity on its own. Instead, it should be viewed as part of a broader public health strategy to improve diet along with other policies such as SSB taxes, improvements in school food environments, and restaurant calorie labeling. Currently, we lack data on the policy's effectiveness because it has not been implemented and evaluated anywhere. However, the policy is based on a strong scientific rationale. SSB portion sizes have grown precipitously over time,³² and the default at most restaurants is large portions. Studies have consistently demonstrated that people consume more food when served larger portions.^{30,31} In addition, people tend to stick with default options,³⁶ which means that few people will request smaller portions at restaurants even if they prefer them.²⁹

One survey of 142 people revealed that 37% felt restaurant portions were usually too large.²⁹ In another survey, 62% of the 61 respondents reported that they would select a "downsized" portion option for a small discount often or most of the time.²⁹ The portion limit policy responds to consumers who want smaller portions without restricting options for those who want larger amounts. It promotes health by leveraging the tendency to stick with default options, given that most people probably will not buy multiple drinks but can if they are motivated to do so.

Using receipt data from 1624 fast food customers, Elbel et al. simulated changes in calories from SSB purchases based on varying proportions of customers switching from more than 16 ounces to fewer than 16 ounces, assuming that the remaining customers would increase to 32 ounces by purchasing multiple SSBs.³⁷ They found that if all consumers downsized to 16-ounce SSBs, there would be an average savings of 63 calories per person. If only 30% of consumers purchased a 16-ounce drink, there would be no significant calorie savings. They concluded that the average number of calories per person would decrease under the policy unless a vast majority (80%) of consumers bought multiple drinks; only then would



the policy lead to an increase in average calories from SSB purchases. Because most scenarios led to calorie savings, these data provide support for the policy.

Certainly there is a need for research to evaluate the policy's effectiveness and the potential unintended consequences, for example people ordering multiple drinks or increases in orders of beverages such as alcohol instead of SSBs, which can be high in calories and may lead to other negative public health consequences. Restaurants could also circumvent the policy by encouraging free refills or offering "bundled" meals that include 2 small SSBs. Although there is reason to think that the policy would reduce SSB intake, its true effect will be known only if it is implemented and evaluated over time.

Legally, complaints that the regulation will not improve diets or reduce obesity are essentially arguments that the serving size restriction is not rational because it will not solve the problem it is designed to address. However, the Supreme Court has explained that the government is permitted to attack problems piecemeal without addressing all facets of the problem a given policy is designed to ameliorate.38 Therefore, a policy's inability to solve obesity on its own would not result in it being considered irrational.

Theme 5

Anti-policy argument. The SSB portion limit policy is unfair because it targets food service establishments only, placing them at a competitive disadvantage.

Pro-policy response. There are successful examples of policies that apply only to restaurants such as menu labeling³⁹ and banning of trans fats.40 This argument suggests that restaurants might lose customers to convenience stores and similar establishments unaffected by the regulation. Although this is possible, it seems unlikely that large numbers of customers who would have otherwise purchased a beverage with their restaurant meal would instead buy their drink at a convenience store. However, this remains an empirical question that needs to be evaluated.

Theme 6

Anti-policy argument. The SSB portion limit policy will hurt certain groups financially more than others, such as low-income families who share large SSBs to save money.

Pro-policy response. Although large containers could not be purchased in food service establishments, restaurants could offer free refills or 2-for-1 deals if they wanted to attract patrons seeking a deal. In addition, the regulation would not affect purchases of larger SSB containers in supermarkets, which could still be bought to share. However, this argument highlights the broader issue of health disparities.

Each year, the Supplemental Nutrition Assistance Program (SNAP)⁴¹ pays an estimated \$1.7 to \$2.1 billion for SSBs purchased in grocery stores,⁴² and one study showed that low-income individuals eligible for SNAP consume more SSBs than those who are not eligible for the program.⁴³ This raises the question of why some groups of people drink more SSBs than others. If frequent consumption of SSBs were primarily a matter of adults with full information making choices on the basis of personal preferences, then the government might not have a role to play in curbing intake. However, the fact that SSB consumption patterns differ according to factors such as socioeconomic status suggests that more than personal preferences are shaping consumption decisions. There is little reason to believe that groups of people differ dramatically in their innate enjoyment of and desire for SSBs.

The reality is that the prevalence of obesity and its related chronic diseases is greater in certain groups than others, including low-income families and members of ethnic and racial minority groups.⁴⁴ Those living in lowincome neighborhoods have greater levels of exposure to risk factors for weight gain, including reduced opportunities to engage in physical activity⁴⁵ and frequent exposure to marketing of fast food⁴⁶ and unhealthy foods.^{47,48} Companies spend nearly \$1 billion annually marketing SSBs,48 and they engage in targeted marketing to Hispanics and African Americans, who are disproportionately affected by obesity.44 A recent report revealed that African American children and teens saw 80% to 90% more advertisements for SSBs than did White vouths.48 From 2008 to 2010, there was a 49% increase in the number of SSB and energy drink advertisements viewed by Hispanic children.⁴⁸ There is

optimism that policies such as the SSB portion cap would help those at highest risk for weight gain live healthier lives.

Theme 7

Anti-policy argument. There is no public health need for the policy; obesity has leveled off and SSB consumption is decreasing.

Pro-policy response. Although obesity is leveling off in some places across the globe, this is occurring only among certain subpopulations (e.g., young children in the United States)⁴⁹ and in areas where the prevalence was already very high. The reality is that no country has reversed its obesity epidemic.50 In the United States, nearly half (48%) of people report drinking soda daily, and SSBs are the greatest contributor to added sugar intake in the American diet.^{51,52} Recent US trends show declines in soda intake,⁵³ but consumption of other SSBs such as sports and energy drinks has been rising,⁵⁴ and other countries are seeing increases in SSB intake.55 These data suggest a need for policies to address obesity and SSB intake specifically.

SUMMARY

The New York SSB portion cap policy was the first large-scale public health policy designed to alter the food environment by reducing portion sizes. We suggest that although this policy was not implemented in NYC, tribal governments and state and local legislatures can legally pursue it.⁵⁶ Although it is impossible to know the effects of the policy without it



being implemented, it is supported by a strong scientific rationale.

Nonetheless, such a policy could have several unintended consequences, including customers circumventing it by ordering multiple beverages or switching to other high-calorie drinks such as alcohol. Restaurants could also attempt to circumvent it by offering bundled beverage options or using strategies to encourage refills.

Finally, if the public perceives the policy as encroaching on freedom, it might erode trust in public health agencies and undermine other public health efforts. Given the scientific rationale for the policy and its legal viability, as well as concerns about unintended consequences, a good way forward would be to conduct a real-world, small-scale pilot test of such a policy in a small municipality.

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Contributors

C. A. Roberto generated the article idea, designed and oversaw the content analysis, and led the writing of the content analysis sections and the sections describing the scientific evidence used to support a sugar-sweetened beverage portion limit policy. J. L. Pomeranz led the writing of the legal sections.

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