

Blood Poisoning Made Benign? Making Sense of Compulsory Vaccination, Governmental Input,
and the Individual

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Professor Bridie Andrews

History of Science 98r: Junior Research Seminar

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This paper examines vaccine regulations and anti-vaccination movements over the past century in Massachusetts. The overarching theme in these movements is how compulsory vaccination forced Americans into allopathic health care. Even though vaccination carried legitimate medical dangers, government action defined it as the only legitimate form of medical prevention. The government additionally turned vaccination into a healthcare system for immigrants and the poor, and it demanded vaccination at the expense of individual choice without governmental liability. These effects in turn widened the anti-vaccination movement and contributed to the methods by which objectors now address vaccination.

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Introduction

In its 1932 Annual Report, the Massachusetts Board of Public Health stated that recent studies in vaccination rates

gave anew figures in regard to the effectiveness of vaccination as a protection against smallpox (it is almost like advancing figures to prove that sunlight is a protection against the dark). The rate of smallpox per 100,000 of the population was as follows: (a) among the unvaccinated, 1048; (b) among those vaccinated over 40 years ago, 61; and (c) among those vaccinated less than 40 years ago, 0! And yet we are told that it is the bathtub rate that prevents smallpox!¹

Despite resounding success rates that defined the vaccine as *the* preventative treatment for smallpox, dissenting viewpoints apparently pervaded the medical field. Much to the mirth of the health official writing this report, critics of the smallpox vaccine gave presumably ridiculous reasons to disagree with its use. The public health report portrayed a critical juncture in the field of preventive medicine; a question of efficacy was at stake in choosing between two major healing sources: vaccination, a product which one injected into the blood, or sanitation, otherwise known as living conditions like the “bathtub rate” or good plumbing.

The relationship between vaccinationists and the “bathtub”-supporting sanitarians who cried out against vaccines during the nineteenth and twentieth centuries is fascinating. Given its amazing success rate, it seems as though people today would have little reason for opposition. In this day and age, physicians and health officials often chastise those who lack faith in what we know today as the crux of preventive medicine: the vaccine. However, the efficacy of vaccines is not yet beyond question—that is, depending upon how one defines what is effective. Since the late eighteenth century, the smallpox vaccine has enjoyed credit for greatly reducing smallpox rates and allaying symptoms of smallpox. By administering the smallpox vaccine, public health officials eventually eradicated the disease. Negative side effects of vaccines, however, have reduced the credibility of

¹ State Board of Health, Massachusetts, *Public Document No. 34: 1932 Public Health Report* (Boston: Wright and Potter Printing Company State Printers, 1933), 6.

vaccinations, turning the practice into a means of harming rather than protecting particular patients; most recently for example, the American Academy of Pediatrics announced on September 9, 2000, that the rotavirus vaccine could potentially harm infants by causing intestinal blockage.²

Risks often apply to newly developed vaccines in addition to the rotavirus; the chicken pox vaccine, licensed by the FDA in 1995, produces only temporary immunity to chicken pox and in the future could potentially increase the rate at which adults contract chicken pox.³ Today, anti-vaccinationist movements identifying these types of problems form a pervasive undercurrent in biomedicine. Suspicious of governmental regulations and the economic interests of large corporations who make and distribute vaccines, these groups use a variety of methods to appeal to the masses, arguing that individuals should make an informed choice about whether to vaccinate. These movements, largely based in the Internet, root themselves in concepts that emerged from similar ones in the early part of the century.

In the early twentieth century, dialogue between pro- and anti-vaccinationists created a great deal of medical tension, but vaccinators ultimately won in both the courtroom and the legislature. The way that the government treated the vaccine, as the be all and end all of preventive medicine, created the key by which anti-vaccinationist beliefs have been able to persist. By imposing regulations on citizens without ensuring their safety or taking responsibility for its shortcomings, the compulsory vaccine created a crisis of faith in the medical system. Which is to say that skeptical public response to vaccination laws indicates a larger problem at hand. Yielding to a single-track health system, in a country supposedly founded on the guiding principle of individual freedom, produces grave uncertainty and discomfort.

² American Academy of Pediatrics, "Possible Association of Intussusception with Rotavirus Vaccination," *Pediatrics* 104 (September 9, 2000), 575.

Background: Medicine in America and its relation to the legislature

The state of smallpox treatment, from variolation to the compulsory vaccine

When preventive treatment for smallpox came to Europe in the late eighteenth century, society defined smallpox as a very serious disease. Some people died from smallpox, and the disease left its survivors with visible scars. People controlled smallpox through variolation, inoculation with the smallpox virus itself. With this method, patients expected to contract a mild form of the disease in order to acquire immunity subsequently; however, inoculated patients still ran the risk of contracting severe smallpox.⁴ Edward Jenner's innovation, introduced in 1796, stood to improve preventive inoculations and became a controversial yet widespread method of preventing the illness. After observing that milkmaids who had survived cowpox were immune to smallpox, Jenner began to inoculate his patients with cowpox. Jenner called this new method the vaccine, deriving the name from the word *vacca*, meaning "cow." The invention helped doctors' tasks in several ways. The vaccine introduced only a local infection in the patient at the inoculation site while producing immunity, and Jenner's method facilitated immediate immunizations subsequently because vaccinators could transfer the pus located at infection sites and thus conduct 'arm to arm' vaccinations.⁵ Using an animal product, furthermore, provided manufacturers with an easily obtainable source for the medicine. Benjamin Waterhouse introduced Jenner's vaccination to America in 1799, and through his efforts, vaccination became a common practice in Massachusetts, where he offered free vaccination in the town of Milton and formed a campaign to vaccinate Boston's citizens. Waterhouse assisted in stressing the necessity of vaccination in the face of the looming and dangerous smallpox virus. Vaccination laws were slow to form in many parts of the country, but Massachusetts became the first state to prescribe legislation, aimed at schoolchildren, in

³ National Vaccine Information Center, Reprint from *The Vaccine Reaction*, 18 January 2001, <<http://www.909shot.com/cpnlrarticle.htm>>, May 1995.

⁴ Derrick Baxby, "Two Hundred Years of Vaccination," *Current Biology* 6 (1996), 769.

1855.⁶

Directing vaccination laws toward children was an innovation unequal to any other attempt at compliance the legislature could suggest. The problem with administering the smallpox vaccination was that people only accepted it in times of epidemic; additionally, the prophylactic was only temporary, lasting up to seven years.⁷ Thus, while vaccinating in times of epidemic allowed the disease to subside, keeping children vaccinated throughout their educational careers helped to construct immunized *populations* which would resist a foreign-introduced smallpox strain. By the late nineteenth century, few adult citizens were immunized, and across the United States fear of smallpox reemerged communities experienced new outbreaks of the disease. Smallpox epidemics that emerged in the 1880s prompted the Massachusetts state legislature to set a statute in 1894 allowing towns to require the vaccination of all citizens during epidemics. However, among diseases in late nineteenth century America, smallpox soon became of little concern to citizens, compared to more threatening diseases such as diphtheria and tuberculosis. Smallpox affected only a few citizens each year, even when it reached epidemic proportions, and because contracting smallpox once would produce immunity, people came to view it as a children's disease that spared most of its victims from death. A study conducted by the Massachusetts Board of Public Health between 1888 and 1905 found that in the 4195 cases of smallpox which had occurred throughout the period, less than 250 cases per year, a total of only 475 had resulted in death.⁸ Furthermore, although smallpox occurred more frequently in unvaccinated individuals—2396 cases, only 321 of these people died, as compared to the 1727 vaccinated cases resulting in 144 deaths. Granted, vaccinated individuals included those who had received vaccination more than the necessary seven years before; but the

⁵ Baxby, 770.

⁶ Bernhard J. Stern, *Should we be vaccinated?* (New York: Harper and Brothers Publishers, 1927), 109.

⁷ Stern, 96.

⁸ State Board of Health, Massachusetts, *Public Document No. 34: 1906 Public Health Report* (Boston: Wright and Potter Printing Company State Printers, 1907), 653.

statistical data showed that the smallpox death rate was similar for both vaccinated and unvaccinated individuals, that vaccination did not guarantee absolute protection, and that most people survived the disease anyway.

Despite the preventive power of the smallpox vaccine, its use instilled concrete fears into the hearts of individual citizens. The polluting qualities associated with a vaccine made it an invasive and undesirable source of healing. Criticized by opponents as “blood poisoning,”⁹ the smallpox vaccine consisted of lymph produced from cowpox scars scraped from a cow’s belly. In addition to appearing repugnant, this lymph was easy to infect; thus, annual reports released by the Massachusetts Board of Public Health discussed the importance of maintaining proper care of vaccines in order to ensure both purity and potency. Particularly inflammatory anti-vaccinationists condemned vaccination as a tool of murder because of the gangrenous ulcers, paralysis, and septicemia that had struck certain vaccinated individuals in Pittsburgh, Pennsylvania.¹⁰ The problems associated with incorrectly administered vaccines had created a group of small, though militant, objectors who attempted to bar compulsory legislation throughout the twentieth century. Some objectors believed that vaccination produced syphilis, among other diseases, and it became known that the common practice of inoculating arm-to-arm hastened the spread of other infections. Anti-vaccinationists often considered these diseases to be a result of the vaccine itself, rather than a side effect from poor procedural techniques. As late as 1927, vaccinationist Bernhard Stern confirmed that illnesses could result from faulty vaccination procedures, relating how “lack of skill on the part of the amateur vaccinators undoubtedly resulted in many serious cases of sepsis.”¹¹

⁹ Multiple sources use this common phrase. Bernarr Macfadden, introduction to J. W. Hodge, *The Vaccination Superstition* (Niagara Falls, 1902), 4. Charles W. Higgins, *Horrors of Vaccination Exposed and Illustrated: Petition to the President to Abolish Compulsory Vaccination in Army and Navy*. (Brooklyn, Chas M. Higgins, 1920).

¹⁰ Pittsburgh Health Club, *Pittsburgh’s Vaccination Scourge of 1924*, (Pittsburgh: Pittsburgh Health Club, 1925), 6-10. The pamphlet also differentiates patients who “died from smallpox” from those “killed by vaccination,” 31.

¹¹ Stern, 37.

Just over ten years later, even though smallpox had subsided a great deal, people still feared the possible consequences of compulsory vaccination. Charles Higgins once described his belief that vaccination not only failed to cure smallpox but also was a source of epidemic. In *Horrors of Vaccination*, a petition to President Woodrow Wilson, he characterized vaccination by the lockjaw and septicemic infections that it could cause, and argued that these infections made the vaccine a *disease* “more dangerous and fatal” than smallpox.¹² Such medical fears reveal that to be anti-vaccinationist was more reasonable than vaccinationists gave credit. As long as a vaccine provided a risky undertaking rather than an uncontested, absolute cure, skeptics understandably refused to accept it unconditionally. Historian Katherine Arnup has proposed, “One of the lessons that history can teach us is that in dismissing the opponents of immunization as ‘mere nonentities’ we underestimate the appeal that their message has.”¹³ It is unfair to reject those who opposed vaccines as marginal thinkers who gradually lost out to the pro-vaccine community as soon as procedures improved. Medical reasons set an understandable basis upon which anti-vaccinationists set their arguments, but the vaccination debate became a more complex struggle over individual rights.

Legislation and objection: the case of *Jacobson v. Massachusetts*

Facing an outbreak of smallpox in mid-winter, the Cambridge Board of Public Health enacted the 1894 compulsory vaccination statute on February 27, 1902. The Board of Health mandated vaccination and revaccination for all Cambridge citizens who had not received vaccinations since March 1, 1897; dissenters were expected to pay a five-dollar fine if they refused to accept treatment. A conscientious objector to the statute, Henning Jacobson, along with some other citizens, refused to pay the fine because he believed the statute was unconstitutional. After his refusal, the Commonwealth of Massachusetts conducted a trial against Jacobson to recover the five

¹² Higgins, 26.

dollars. The case began at state level, and the court ruled in the favor of the Commonwealth, so Jacobson appealed to the United States Supreme Court toward the end of 1904, asserting that compulsory vaccination laws infringed upon his constitutional rights to live according to his own will. The court came to rule in favor of Massachusetts. The final statement, delivered by Chief Justice Harlan, expressed that the court believed Jacobson was acting selfishly in rejecting the public health statute. The outcome of *Jacobson v. Massachusetts* exposed the delicate interplay of individual and state rights that continues to characterize the vaccination debate.

First, Jacobson's position demonstrated that objectors to vaccination formed a significant part of the population. Harlan ruled that the government had every right to enact quarantine and other public health laws, and that it could "invest local bodies called into existence for purposes of local administration with authority in some appropriate way to safeguard the public health and the public safety."¹⁴ Although the court conceded that "some physicians of great skill and repute" opposed vaccination, it identified vaccination as the correct prophylactic treatment against smallpox.¹⁵ The legislature had the responsibility to identify an appropriate mode of treatment and to follow through with that proposed mode, whether or not it was conclusively effective. Determining the type of medicine that was medically efficacious turned into a tool for the professionalization of medicine, discounting alternative medical procedures.

Jacobson v. Massachusetts consequently also helped attest to state power to control a citizen's behavior for the public good. Jacobson's lawyers argued that compulsory vaccination laws acted contrary to his rights stated in the Preamble to the Constitution and in the Fourteenth Amendment, that "no State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property,

¹³ Katherine Arnup, *Canadian Bulletin of Medical History* 9 (1992),171.

¹⁴ *Jacobson v. Commonwealth of Massachusetts*, 197 U.S. 11 (1905), sec. 68.

¹⁵ *Jacobson v. Commonwealth of Massachusetts*, sec. 75.

without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.”¹⁶ For the sake of his personal choice and liberty, they said, Jacobson should have the right to refuse vaccination. The court, on the other hand, believed that Jacobson’s resistance to vaccination was an attempt to evade his civic duty. When the private rights of the individual conflicted with the needs of the state to contain the disease in the public spectrum, Harlan asserted, the state could restrict individual rights by compelling compliance. The cost of living in a given society was being responsible for the welfare of that society, and from this ruling, the court deemed that constitutional liberty was not absolute. A desire to assert individual rights eventually propelled the anti-vaccinationist argument. Vaccination law became questionable in this manner at instances when vaccinators targeted certain populations over others for immunization.

In addition to defining vaccination as a social responsibility, the government regarded compulsory vaccine as military action that exempted its administrators from liability. Adults underwent compulsory vaccination only in times of epidemics, following through with the treatment as a primary ‘line of attack’ in the battle against this disease. The judgment reached in *Jacobson v. Massachusetts* revealed the attitude that the legislature expected the individual to take in receiving a vaccine. Harlan invoked a metaphor of mobilization toward war:

The liberty secured by the 14th Amendment, this court has said, consists, in part, in the right of a person ‘to live and work where he will’, and yet he may be compelled, by force if need be, against his will and without regard to his personal wishes or his pecuniary interests, or even his religious or political convictions, to take his place in the ranks of the army of his country, and risk the chance of being shot down in its defense.¹⁷

In addition to demonstrating how the court viewed vaccination’s efficacy and necessity, the passage also reveals the concession that vaccination *could* kill. Just as the citizen knew that he may die in international warfare, he must also be prepared to die from vaccinating himself for the sake of the

¹⁶ U.S. Constitution, amend. 14, sec. 1.

¹⁷ *Jacobson v. Commonwealth of Massachusetts*, sec. 70

population, and to do this without compensation. The tone of sacrifice inherent in the decision to vaccinate oneself rendered the concept of free will nonexistent. The government, in its zeal to provide public health, had also delivered death sentences to those who would react poorly to a vaccine. Among the other fears regarding vaccination, this very great threat continues to provoke arguments that informed consent should be an integral part of the vaccination process.

Vaccination as an effective treatment: establishing the correct medical framework

Jacobson v. Massachusetts characterized how the government's treatment of smallpox as a public health concern funneled people into a one-track mode of treatment in the twentieth century. The issues confronted in the trial suggest that the state's use of compulsory vaccination served to universalize the use of allopathic medicine, to reinforce social hierarchies, and to militaristically impose regulations without liability. At the turn of the century, the medical community strove to attain a more professional character, the effective result of which was to edge out marginal medical thinkers and thus reduce the number of medical styles competing against one another. Many factors contributed to the new focus that medicine underwent; for example, between 1906 and 1910, increased expenses, as well as stringent state licensing requirements, caused almost one-fifth of the country's medical schools to shut down.¹⁸ Furthermore, efforts of individuals like Abraham Flexner created a hierarchical relationship among the nation's medical schools. Representing the Carnegie Foundation, Flexner published *Bulletin Number Four*, a critical evaluation of medical schools around the country; his report encouraged the top and middle-ranked schools to improve and suggested that the lowest-ranked schools be eliminated.¹⁹ Although his studies, published in 1910, affected medical education much less than economic restraints that bankrupted commercial medical schools, Flexner exhibited the larger trend to promote a homogeneous medical community. The government

¹⁸ Paul Starr, *The Social Transformation of American Medicine* (New York: Basic Books, 1982), 118.

hastened the development of a monolithic medical system by regulating the behavior of individuals. Rendering vaccination compulsory forced the American population to accept a particular form of healing. Allopathy, defined originally as a curative treatment used to counteract people's symptoms, acquired a new meaning; state support distinguished it as the *correct* medical treatment.

The societies that opposed vaccinators consisted largely of medical practitioners such as homeopaths, botanical physicians, hydropaths, and sanitarians.²⁰ William Tebb of England, with assistance from homeopaths, founded the Anti-vaccination Society of America in 1879.²¹ Although these doctors rejected the preventive properties of the vaccine, they suggested alternate ways to treat smallpox. George W. Winterburn, a leading American homeopathic physician, argued vigilantly that sanitary measures were more effective than vaccinations in preventing the spread of illness.²²

Relying solely upon vaccination as a preventative method, anti-vaccinationists believed, underestimated the power of other medical practices to work effectively. State induced vaccination laws marginalized these practitioners, who protected their livelihoods by constantly refuting the vaccine's efficacy. According to Samuel W. Darling, a Rhode Island anti-vaccinationist, Christian Science was a viable substitute for the vaccine. Because it was, he said, still a poorly understood yet profoundly powerful method of disease prevention, to summarily reject it in favor of vaccination was to limit one's therapeutic options.²³

Anti-vaccinationists supported alternative healing treatments, and they deeply criticized compulsory vaccination laws for directing individuals into one medical system. Charles Higgins abhorred vaccinators for attacking the procedures used by the quack, the patent medicine doctor, and the Christian Scientist, who had never "been guilty of any damage to health and life comparable

¹⁹ Starr, 119-120.

²⁰ Martin Kaufman, "The American Anti-Vaccinationists and their Arguments," *Bulletin of the History of Medicine* 41 (1967), 468-469.

²¹ Stern, 105-106.

²² Kaufman, 468.

to this awful record of the vaccine school, which school seems to arrogate to itself such superiority and dominance over its fellow men.”²⁴ Such focus on the inherent hegemonic tendencies of the compulsory vaccination illuminates just how threatened its objectors felt. Not only had the legislature encroached upon individual rights, but it also fostered treatment that could potentially harm individuals.

The anti-vaccinationists’ consistent defenses demonstrated how much they wanted to pursue their mode of treatment. Early anti-vaccinationists suggested that depending upon the healing powers of nature itself or using salt properly could prevent smallpox.²⁵ Vaccination objectors were quite creative in the providing new curative methods. Reverend Isaac Peebles, for example, cited three treatments that could substitute the vaccine: “to wrap the patient in a sheet soaked in milk; the second, to bathe the patient in linseed oil; and the third, to apply dry flour and use no drugs.”²⁶ To prove that alternative styles could be efficacious, anti-vaccinationists went so far as to attribute the ends of smallpox epidemics purely to hygienic measures. J. W. Hodge described how mass disinfection of households with formaldehyde eventually ended a Cleveland smallpox epidemic, at which time each sanitation worker treated “every section of the city where the disease had shown its head, and every house in this section, no matter if smallpox had been within or not, and every room, nook, and corner of the house . . . It took over three months to do the work, but the result was most gratifying.”²⁷ Anti-vaccinationists made every effort to be as thorough as the vaccinators were in administering their curative measures for towns suffering from smallpox. Defending sanitary practices in this manner was instrumental to the efforts of the anti-vaccinationists, for whom prevention came from cleanliness, not from injecting blood with a foreign substance.

²³ Samuel W. Darling, *Vaccination a Gigantic Fraud* (Providence: 1892), 47-48.

²⁴ Higgins, 66.

²⁵ Kaufman, 476.

²⁶ Isaac Peebles, *Unanswerable Objections to Vaccination* (1902) 27 n, in Stern, 107.

²⁷ Hodge, 10.

The vaccinators knew, amid this controversy, that opponents perceived vaccination to have harmful consequences. Into the 1930s, the government promoted vaccinations in a variety of ways. First, scientific medicine made great efforts to improve the smallpox vaccine, in addition to suggesting better methods of administering it. In 1915, the Board of Public Health called particular attention to improving vaccination programs, taking note that the “method of scarification,” such as using quills to make shallow cuts “is considered unsafe and unsatisfactory in that it invites infection.” Instead, they recommended vaccination via incisions with a needle or light scratches on the skin.²⁸ Even in an increasingly homogeneous medical system, some heterogeneity decreased the credibility of treatments. In order for vaccination to render itself more acceptable to the public, authorities imposed new definitions on the practice to give it a more beneficial tone. Because objectors perceived vaccination as blood poisoning, redefining it and even renaming attempted to make its use more palatable. Guides for doctors promoted vaccinations unceasingly. These guides suggested using carefully constructed inoculation methods to ensure the purity of vaccines, striving to prove in practice that vaccination was benign. Allan Gilliam’s *Standard Method for Inoculation* suggested that doctors use rhetoric such as “inoculate” to “produce immunity” rather than “vaccinate” or “vaccination,” words which Gilliam evidently perceived as less acceptable than the former choices.²⁹ He stressed that vaccination should appear as gentle, yet, as systematically administered, as possible. Certain procedures, such as dressing the vaccination scar and stamping it with a special marking, were used because of their “marked psychical effect” on patients, insofar as they prevented the patient from tampering with his treatment.³⁰ The inoculation method should deliver a highly scientific, systematized approach, almost to assert the efficacy of the vaccine simply

²⁸ State Board of Health, Massachusetts, *Public Document No. 34: 1915 Public Health Report* (Boston: Wright and Potter Printing Company State Printers, 1916).

²⁹ Allen F. Gilliam, *Immunization against Smallpox: a Standard Method for Inoculation*. (San Luis Obispo, 1933), 1.

³⁰ *Ibid.*, 2.

by the ordered manner in which the doctor provided the treatment. By such well-regulated means, the vaccination grew to represent better medicine, and with the backing of the government to force individuals to undergo vaccination, allopathic medicine took hold of preventive medicine.

Characteristic of the procedure was its singular method through which doctors should administer it and that it was the only option available. At the same time, however, vaccination still lacked a clear definition of the extent to which it helped the individual and the population.

The frightening result of the continued skepticism over vaccination was that, by the mid-twentieth century, vaccination still left a negative impression on citizens though the vast majority of people underwent the treatment. A national Roper survey conducted in 1943 revealed that six out of every ten people believed that vaccination could not prevent smallpox, although it could lessen the harm induced by the disease. More important, twenty-four percent of people surveyed did not know or did not believe that vaccination prevented smallpox.³¹ In other words, anti-vaccinationist thought permeated a society although compliance remained nearly universal. In the Roper survey, eighteen percent of mothers felt that vaccination was more harmful than smallpox itself.³²

Although parents gave their children vaccinations, they agreed to it half-heartedly, without the conviction that the treatment would indeed help. The methods that the state used to legitimate vaccination appeared more coercive than helpful by treating vaccination as the only viable option for an individual to take.

Vaccination: from cultural xenophobia to social responsibility

Vaccinationist literature additionally exuded a sense of prejudice against the socioeconomically disadvantaged, and the pressures that legislation placed on people with certain

³¹ Donald R. Ravenscroft and Jack Solomon, Jr., "Vaccination, Smallpox and the Law—An Experiment in Scientific Jurisprudence," *Nebraska Law Review* (32) 1953, 567-568.

³² *Ibid.*

jobs called into question the intentions of legislators. Vaccination regulations set stringent requirements that prison inmates as well as members of various ‘institutions’ remained under compulsory vaccination statute when the legislature believed it was necessary.³³ The legislation implicitly suggested that the conditions in these locations were more susceptible to the smallpox virus, and perhaps that the virus spread more easily among the lower class individuals at the institutions. Early reports of the Massachusetts Board of Health often asserted that smallpox epidemics began through industrial workers and local immigrants. The 1899 *Annual Report* described how a smallpox epidemic had transmitted from “colored women employed in the laundry” near a prison facility, and a second attack arose from, “*as is often the case*, an operative who was employed in the rag-sorting room of a mill” (emphasis mine).³⁴ The board also tended to attribute the origins of epidemics to the socioeconomically disadvantaged; for example, it attributed a 1917 epidemic in Worcester, MA to a Finnish immigrant and the members of the boarding house in which he lived.³⁵ The industrial poor were inevitably to blame. By isolating particular demographic groups to prevent smallpox, the compulsory vaccination indicated that the wealthy required protection from the propagators of disease, immigrants and the urban poor. Additionally, the solution to smallpox occurring in this demographic became universal vaccination rather improved living conditions, which the Board of Public Health never stressed when it documented smallpox in urban communities.

Vaccination requirements exhibited class divisions most blatantly in schools, an arena in which the vaccine acquired an increasingly onerous presence. Since legislators first administered compulsory vaccination in 1855, public school students were the only individuals obliged to be

³³ Massachusetts, *Acts* (1894), ch. 515 s. 5.

³⁴ State Board of Health, Massachusetts, *Public Document No. 34: 1899 Public Health Report* (Boston: Wright and Potter Printing Company State Printers, 1900), x.

³⁵ State Board of Health, Massachusetts, *Public Document No. 34: 1917 Public Health Report* (Boston: Wright and Potter Printing Company State Printers, 1918), 396.

vaccinated at all times, while students in private schools had no such requirements. Objectors questioned the basis upon which the legislature limited compulsory vaccination only to public schools. The London Society for the Abolition of Compulsory Vaccination argued early on that “the unvaccinated . . . can do but little injury to those who are vaccinated, and are dangerous only to themselves and to one another.”³⁶ Similarly, a 1916 editorial in the *Medico-Legal Journal* argued that compulsory vaccination in public schools was unreasonable and unnecessary. “For, if it be admitted, that vaccination protects against smallpox, and all the children in school are vaccinated, then smallpox is thereby excluded. If then an unvaccinated child, even though it had been exposed to smallpox infection should enter the school-room, surely, it could not give the smallpox to the children, protected by vaccination.”³⁷ The supposed need for vaccination in public schools magnified to skeptics the inefficiency of the vaccine. Why make vaccination compulsory if those who did not want smallpox could inoculate themselves without inhibiting the rights of others?

A degree of social control appeared inherent in the legislation rather than it being the simple issue of public protection. The legislature appeared to demonstrate intolerance for parents to raise their children according to their wills, and it more importantly explained which classes could express their rights. Imploring the legislature to be clear rather than deceptive in incorporating this social control, the *Medico-Legal Journal* editorial continued:

If you wish to force a parent, who has no money to send his child to a private school, to have his children vaccinated: force him by taking the child forcibly and vaccinating it. Thus at least he will know wherein his liberty and his equality consists. That his child is being vaccinated, because he is poorer than the man who can send his children to a private school or have private tutors for them. He will learn that he is equal minus, while the man with money is equal plus.³⁸

The vaccination legislation had implied that public school children, arguably poorer than those

³⁶ London Society for the Abolition of Compulsory Vaccination, *Modern Tolerance: The Vaccination Laws*, (c. 1881).

³⁷ Alfred W. Herzog, “The Exclusion of Unvaccinated Children from the Public Schools,” *Medico-Legal Journal* 33:3 (June 1916), 4.

undergoing private educations, lacked the right to treat their children with the medical care they desired. Furthermore, the hegemonic implication was that poor children were more susceptible to the smallpox virus than their wealthier counterparts were. Health officials attempted to elevate the status of vaccinated public school students, in that they desired to “do away with the parasitic protection which it is possible for private school pupils to obtain at present, since the public school pupils form around them a sanitary order of immune individuals.”³⁹ Although various individuals approaching the legislature recommended as early as 1932 that children’s vaccination be universal,⁴⁰ it took a great deal of time for the legislature to incorporate the suggestions. It was not until 1967 when Massachusetts law reflected such a sentiment.⁴¹

When compulsory vaccination extended to private schools, hence universalizing treatment, the government made its cause more legitimate. Despite this effort, however, intent remained an important issue. Part of the government’s controlling, one-tracked scope was the fact that it rendered vaccination the appropriate solution to protecting the population at large, without having to guarantee additional healthcare. The procedure by which it conducted such an act restricted people’s abilities to rear their children as they wished. Requiring vaccination as a preventive measure for all communities without incorporating stronger policies such as government-sponsored healthcare indicates that the laws still served to protect society from individuals more than to protect individuals from disease.

Implications of the Police Power and a militaristic outlook

The third component of the debate over vaccination involved the conditions that individuals

³⁸ Herzog, 5.

³⁹ State Board of Health, Massachusetts, *Public Document No. 34: 1928 Public Health Report* (Boston: Wright and Potter Printing Company State Printers, 1929), 5.

⁴⁰ Massachusetts, House, *An Act Requiring the Vaccination of Children in Private Schools*, House no. 284 (1932).

⁴¹ *Acts and Resolves of Massachusetts*, Chapter 590, Section 15, 1967.

had to accept in vaccinating themselves. To vaccinate was to sacrifice; a patient risked harm to avoid spreading illnesses to others. The power of the legislature to police the activity of individuals permitted this restriction of constitutional rights. Police power was a threatening prospect. Darling angrily cited the torture that a child named Frances Aston experienced after obtaining a compulsory vaccination in 1892. Crippled after receiving compulsory immunization at school, a procedure to which her parents agreed only because they wished their daughter to continue her education, Frances died within six years, and her family received no compensation for the loss.⁴² This type of experiential anecdote expressed the tangible fears in the minds of the anti-vaccinationists. Not only did the state control the body through the police power, but it could also inflict great harm on the body without liability. According to James A Tobey in the *New York University Law Review*, the government was not required to provide “compensation for property so demolished or removed in the interests of public health.”⁴³ If compulsory vaccination were to inflict harm on a citizen, the legislature held no responsibility for the error; however, when an error determined the life or death of a citizen, this lack of liability became highly questionable.

To cope with fear over liability and medical control, informed consent came into play in the Massachusetts legislature. In 1932, a proposal submitted to the Massachusetts Senate recommended for “any physician vaccinating a child or adult without the consent of said child's parents or guardians, or the consent of the adult, [to be held] personally liable for all injuries resulting therefrom.”⁴⁴ This bill supported ideals of informed consent in addition to supporting the health of individuals within the larger society. The success that the anti-vaccination campaign wanted in this situation was not the abolition of vaccination, but an enforced accountability on the part of the doctor if any injuries resulted from the process. However, as Massachusetts law now mentions,

⁴² Darling.

⁴³ Tobey, “Public Health and the Police Power,” *New York University Law Review* (4): 1927, 129.

⁴⁴ Massachusetts, House, *An Act for Protective Vaccination*, House no. 904 (1932).

blaming the results of vaccination on doctors, who were following a public health statute, proved unfair. Doctors and nurses remained free from liability in such situations. The question of where to situate this liability, however, became a stronger concern.

The other element of vaccination's militaristic undertone existed in that anti-vaccinationists saw the compulsory treatment as one that reduced human agency. By compelling vaccination, commanding authorities were instructing the proletariat on how they should treat their bodies. "We have seen men, calling themselves doctors, claiming the right to force dangerous medical operations on school children and soldiers without their free will and consent, and with some form of barbarous intimidation or coercion, as they might do with dangerous beasts."⁴⁵ Anti-vaccination activists similarly referred to compulsory vaccination as a form of "medical barbarism,"⁴⁶ in which private liberties were violated supposedly for the sake of the community. The control that the state asserted over the body held line with a militaristic attitude to the public good. By placing a medical practice like vaccination in such a tyrannical light, the anti-vaccination campaign posed a tangible threat to those who favored the practice. The campaigns stood to gain greatly from the tendency of vaccinationist doctors to appear controlling and manipulative, in addition to the fact that a significant portion of the general public did not believe that they were benefiting individually from vaccinations. Vaccination had come to be seen as an assault on private lives rather than as a protective safeguard against the outside evils of the virus.

Not surprisingly, such feelings regarding vaccination continued throughout the twentieth century. Although the state continued to sanction compulsory vaccination, the manner by which people could escape vaccination changed dramatically over this century. The highly specific exemption procedure seemed to offer more red tape than solace for anti-vaccinationists. From 1894 through the 1930s, any individual who presented a standardized "certificate, signed by a

⁴⁵ Higgins, 17.

registered physician . . . that the physician has at the time of giving the certificate personally examined the child and that he is of the opinion that the physical condition of the child is such that his health will be endangered by the vaccination,” could exempt a patient so long as his or her health prevented the procedure from being a viable option.⁴⁷ Obtaining this exemption, of course, was easier said than done. Henning Jacobson of *Jacobson v. Massachusetts* lacked such a certificate to confront his compulsory vaccination. The court had argued that he could not claim the exemption with the reasoning that “‘quite often,’ or ‘occasionally,’ injury had resulted from vaccination, or because it was impossible, in the opinion of some, by any practical test, to determine with absolute certainty whether a particular person could be safely vaccinated.”⁴⁸ Jacobson’s objections, including his belief that vaccination could kill him, were not enough to say that a smallpox vaccine definitely would have compromised his health.

After 1928, including certain years when not a single smallpox case had emerged in Massachusetts,⁴⁹ the government secured its stronghold on vaccine as preventive medicine, and it seemingly loosened its restrictions on the escape clause. At the same time, vaccinationists imposed specific cultural values in their escape clauses. In 1938, exemption extended slightly; in the absence of a declared medical emergency, parents who objected to vaccinating their children on religious grounds could submit a physician’s certificate or an affidavit signed by a church official indicating that the parent was “an adherent or member in good standing of such church or religious denomination.”⁵⁰ This exemption broadened in 1971, in that the parent would have to convey his or

⁴⁶ *Is Compulsory Vaccination in Public Schools Justifiable?* (New York, 1889), 4.

⁴⁷ William Fowler, L.L.B., *Smallpox Vaccination Laws, Regulations, and Court Decisions* (Washington: United States Government Printing Office, 1927) 39.

⁴⁸ *Jacobson v. Massachusetts*, 81.

⁴⁹ State Board of Health, Massachusetts, *Public Document No. 34: 1933 Public Health Report* (Boston: Wright and Potter Printing Company State Printers, 1934), 4.

⁵⁰ Massachusetts General Laws Annotated, Chapter 265 section 5.

her “sincere religious beliefs” rather than producing the endorsement of a church official.⁵¹ The parent had to provide such a certificate regularly, usually every two months, for the student to remain exempt from vaccination; this requirement remains in effect today.

Conclusion: Influence on present concerns

Judging from the actions it took to guide vaccination, the state’s responses to objectors remained uneven by consistently pointing citizens to the vaccine as a sole preventive treatment for diseases. In spite of their health risks, a variety of vaccinations are compulsory for school entrance, and people can only object on religious grounds rather than by questioning medical efficacy. In its broad scope to regulate public health, compulsory vaccination came to symbolize part of the melting pot motif that occurred in the American medical system. By sending alternative medical treatments out of the picture and implicitly treating the vaccination as the only healthcare treatment guaranteed to individuals, the government established dependency upon allopathic medicine.

In today’s law books, compulsory vaccination remains much the same as it was in the early twentieth century. If the Public Health Department of Massachusetts ever declares a medical emergency in response to an epidemic, all citizens will undergo immunization, and refusing treatment will still result in a five-dollar fine. School vaccination requirements have remained similar as well; although smallpox has been eradicated and the vaccine is no longer necessary, the state requires immunization for “diphtheria, pertussis, tetanus, measles and poliomyelitis and such other communicable diseases” as the Public Health Department determines to be necessary.⁵² While both religious and medical exemptions function in Massachusetts, as well as in 46 other states, Mississippi and West Virginia limit exemption to medical causes, and Minnesota provides a “philosophical” exemption by which the patient or parent must explain a philosophical or moral reason why he or

⁵¹ Massachusetts Acts and Resolves, 1971, Chapter 285.

she objects to vaccination.⁵³ Thus, though science does not have to work against an individual's religious tenets, governmental decisions on treatment efficacy essentially define the vaccine as incontestable in the scientific realm.

Answering to the idea that vaccination might be harmful, concern regarding liability resulted in the formation of governmental programs that have complicated the vaccination debate. The National Childhood Vaccine Injury Act of 1986 allowed families of injured or dead vaccinated individuals to file claims for monetary damages incurred by the patient's death, pain and suffering, and any loss of income up to \$250,000.⁵⁴ Furthermore, various types of legislation are currently underway, attempting to ensure patient choice for the hepatitis B and chicken pox vaccines. At the same time, however, patient choice may be increasingly compromised. The Department of Public Health recently suggested legislation that would create a database of Massachusetts citizens and the vaccinations that they have received, supposedly to create a better immunization program by which the state could remind parents when their children required vaccinations.⁵⁵ In other words, the Department could effectively police parental decisions over when, and what, to vaccinate.

Organizations such as the Massachusetts Citizens for Vaccine Choice currently try to teach parents about impending vaccine legislation as well as to incite their personal involvement. The rise of issues like privacy and choice in the vaccination debate indicate that this seemingly small cause has larger consequences at stake, and public watch-dogs will not necessarily teach people how to take better care of themselves. Understanding and deciding upon vaccination according to a vaccine's observed medical effects is the essential basis of the anti-vaccinationist platform today.

⁵² Massachusetts General Laws, Chapter 76, section 15.

⁵³ Kristine M. Severyn, "Jacobson v. Massachusetts: impact on informed consent and vaccine policy," *The Journal of Pharmacy and Law* 5 (Summer 1996), 260.

⁵⁴ National Vaccine Information Center, "The Vaccine Injury Compensation Program," 17 December 2000, <<http://www.909shot.com/compen.htm>>, 1999.

⁵⁵ Massachusetts Citizens for Vaccine Choice, "State Tracking System Assails Privacy," *Massachusetts Law and Your Rights*, 20 January 2001, <<http://www.vaccinechoice.org/rights.htm#tracking>>.

This focus highlights how the questions anti-vaccinationists brought up in the early twentieth century are still very much prevalent—medical efficacy is still questionable and personal choice remains at a premium. By offering parents a host of information regarding the possible consequences of vaccination and the implications of incoming legislation, vaccine choice groups stress the idea that rather than being a mandate we follow by our doctors' and legislators' orders, vaccination should be a decision that parents make based on the information that both sources provide.

The Internet has become the major propagator of anti-vaccination agendas that attempt to keep parents informed effectively. Any worried parent do can take sufficient advantage of the information age with the search term “vaccine choice.” Various websites combating governmental regulations offer aid in formulating letters to obtain religious exemption from vaccinations; strongly worded and with many Biblical citations, such letters claim to be foolproof in attaining exemption.⁵⁶ The anti-vaccinationist literature provided by angry opponents remains warning and combative, much like its character had been in the early twentieth century. Statistical data, characteristic of most vaccination web sites today, question the harmful attributes of vaccination. Most notable is a detail regarding the pertussis or “whooping cough” vaccine, which can cause children to contract meningitis. Adam Phillips of the Citizens for Healthcare Freedom claims that ten times more people die annually from this vaccine than do those who die from the disease.⁵⁷

The websites associated with movements that are more militant certainly attract the most notice, and in consequence, such objectors help to reduce the credibility of the anti-vaccinationist movement. Just as the medical community rejected anti-vaccinationists as interfering quacks, the

⁵⁶ Adam Phillips, “How to write a religious vaccination exemption letter in the United States,” *Citizens for Healthcare Freedom*, 15 December 2000, <<http://www.unc.edu/~aphillip/www/vaccine/relxmptn.htm>>, 2 February 1998.

⁵⁷ Phillips, “Dispelling Vaccination Myths,” *Citizens for Healthcare Freedom*, 17 December 2000, <<http://www.unc.edu/~aphillip/www/vaccine/dvm1.htm>>, 2 February 1998.

same fate could very well befall current anti-vaccinationists. At the same time, however, the Massachusetts Citizens for Vaccine Choice, a well organized movement with mindful objectors, assert their need for voluntary vaccination by pointing out medical studies and instructing parents to contact legislators about future vaccination laws. For these movements, the key to insuring success will be defining explicitly the extent to which vaccines produce more complications than cures.

Throughout its existence as a compulsory treatment, the vaccination has presented itself, on various fronts, as an invasive procedure that could harm the individual while attempting to benefit the public. Though there is medical basis to disagree with vaccines, the law permits us to refute vaccination only if we already have poor health or if we disagree on a religious basis. What redeems the situation is that, at least presently, the government claims liability for injuries resulting from compulsory vaccination; however, monetary compensation does not return a lost human life. The regulations imposed on vaccination requirements do not overpower the authoritarian character that vaccination still possesses.

Why is it that the government has applied so much pressure to individuals to vaccinate? Data on the chicken pox vaccine suggests that the vaccinations have risen in popularity because they ensure a more productive population. When children contract chicken pox, parents inconveniently must stay home from work for a week before the child's sores are gone.⁵⁸ This explanation, with cynical implications, is one of many reasons that the public supports vaccination, it answers to the agenda of American society at large. In our haste to deal with diseases through quick fixes, our interests have shifted drastically into the short-term. Although vaccinating oneself and one's children may keep parents out of bed and children at school, the action has high potential to be counterproductive in the future. The most looming possibility is that vaccinated adults who do not take chicken pox booster shots may experience a severely debilitating version of chicken pox as a

result. But realizing the possible consequences requires a public educated in weighing the risks of the disease with those of the vaccine, amid the constraints that the government makes on personal choice.

Governmental interest inevitably also points to maintaining a population whose citizens cannot harm one another, and in this case, cannot spread disease to one another. With the great power that medical professionals enjoy: instructing us how to live, eat, protect ourselves, governmental regulation might attempt to curtail this power to the extent it can. Opposition to vaccination will persist, of course, until the practice becomes entirely voluntary. The solution, removing vaccination legislation, would bring America closer to the freedom-seeking roots upon which it founded itself. Yet, making vaccination completely voluntary would defeat the purposes that we know it to have—including self-sacrifice to benefit a community and the formation of a germ-free population. With many conflicting interests – primarily public versus private ones – a great deal of confusion characterizes the debate; in the end, we ask what vaccines really mean to our society. At this point, all vaccinations may not be as effective, nor as safe, as they would need to be for everyone to undergo vaccination voluntarily. But the question remains whether compelling a population to vaccinate itself is a victory against disease if an unsuccessful treatment alienates the injured individual it had intended to protect.

⁵⁸ Mark Goldstein, “Chickenpox or Vaccine: A Choice?” 20 January 2001, <<http://mit.edu/afs/athena.mit.edu/org/m/medical/hm11chic.htm>>, 24 October 1995.

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