

# **The Regulatory Shifting Baseline Syndrome: Vaccines, Generational Amnesia, and the Shifting Perception of Risk in Public Law Regimes**

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## **Abstract:**

Vaccination mandates have been controversial since governments first imposed them. Nevertheless, the intense politicization surrounding the COVID-19 pandemic obscures a more pervasive problem for U.S. public health laws and vaccine-preventable diseases. Until the late twentieth century, the risk of various dread diseases was sufficiently high for most people that they embraced new vaccines. The intentional result of federal and state vaccination policies was that fewer people got these diseases. The perverse result was that perceptions of disease risk shifted, making the vaccines themselves seem like the far riskier option to many people, generating pressure to eliminate or mitigate vaccination mandates. Perhaps most importantly, in the early twenty-first century, state legislatures enacted exemptions from school vaccination requirements, setting the stage for measles resurgences in 2015 and 2019.

Focusing primarily on measles vaccination, this Article argues that, while not the only factor, a regulatory shifting baseline syndrome fueled the pre-COVID-19 resistance to vaccination. In 1995, Dr. Daniel Pauly described the “shifting baseline syndrome” and its problems for fisheries management. Pauly posited that each generation forgets what the ocean and its fisheries used to contain, leading successive generations to accept the current impoverished state of marine fisheries as normal. This generational amnesia makes opaque what the goals of fisheries regulation should, or even could, be.

This Article brings the shifting baseline concept into public law, identifying for the first time a regulatory shifting baseline syndrome that can undermine the law’s ability to protect society. This syndrome arises when a public legal regime, like a school vaccination mandate, so successfully eliminates a societal problem, like dread diseases, that citizens, politicians, and lawmakers forget that the regime is, in fact, still working to keep that problem at bay. This generational amnesia can lead to changes in law and policy that allow the prior problem to re-

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emerge in society, as occurred with measles outbreaks. While COVID-19 vaccination mandates are almost uniquely politicized and too new to reflect this syndrome, decisions in the COVID-19 context may nevertheless give the regulatory shifting baseline syndrome more room to operate, potentially threatening public health gains made with respect to other vaccine-preventable diseases in the United States.

THE REGULATORY SHIFTING BASELINE SYNDROME: VACCINES, GENERATIONAL  
AMNESIA, AND THE SHIFTING PERCEPTION OF RISK IN PUBLIC LAW REGIMES

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And you, of tender years,  
Can't know the fears,  
That your elders grew by.  
—Crosby, Stills, Nash & Young, *“Teach Your Children”*<sup>1</sup>

Those who cannot remember the past are condemned to repeat it.  
—George Santayana<sup>2</sup>

## INTRODUCTION

In the middle of the ongoing COVID-19 pandemic, it has been easy to forget that other vaccine-preventable diseases remain public health issues. Measles, for example, is far more contagious than most strains of COVID-19,<sup>3</sup> and measles outbreaks are expensive. When seventy-one people in Clark County, Washington, caught measles in 2019, the relatively small outbreak cost the county \$3.4 million and probably spread to other places, like Oregon and Georgia.<sup>4</sup> Tragically, most of the victims were “children younger than 10 who hadn’t received the measles-mumps-rubella (MMR) vaccine.”<sup>5</sup> At least part of the cause of this and similar outbreaks, this paper will argue, was generational amnesia induced by the regulatory shifting baseline syndrome. The fact that several generations of Americans never experienced the nineteenth and twentieth centuries’ dread diseases, particularly measles, has improperly devalued vaccination mandates such as school vaccination requirements and contributed to a heightened perception of risk from the vaccines themselves.

In 1995, Dr. Daniel Pauly described the “shifting baseline syndrome” and the problems it causes for fisheries management.<sup>6</sup> Pauly argued that each generation of fishers and fisheries managers forgets what the ocean used to produce, instead viewing the current abundance and size of desired fish—however demonstrably impoverished those might be from a historical perspective—as normal.<sup>7</sup> As a result, fisheries management, laws, and policies

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1 CROSBY, STILLS, NASH & YOUNG, *Teach Your Children*, on *DÉJÀ VU* (Atlantic Records, 1970).

2 GEORGE SANTAYANA, *THE LIFE OF REASON* (1905).

3 Amy Norton, *Driven by Anti-Vaxxers, Measles Outbreaks Cost Everyone Money*, U.S. NEWS & WORLD REP. (Mar. 12, 2021, 8:25 AM), <https://www.usnews.com/news/health-news/articles/2021-03-12/driven-by-anti-vaxxers-measles-outbreaks-cost-everyone-money> [<https://perma.cc/5WMH-JR6J>].

4 *Id.*

5 *Id.*

6 Daniel Pauly, *Anecdotes and the Shifting Baseline Syndrome in Fisheries*, 10 TRENDS IN ECOLOGY & EVOLUTION 430, 430 (1995).

7 *Id.*

never seek to restore fisheries and marine ecosystems to true health but instead accept and adjust to progressively worsening ecological conditions.<sup>8</sup> Generational amnesia, in other words, makes opaque what the goals of regulation should be, or even *could* be. Therefore, in fisheries regulation and other forms of species and ecosystem management, reconstructing historical ecological conditions has become the primary means of correcting the shifting baseline syndrome and implementing more aggressive recovery goals.<sup>9</sup>

This Article moves the shifting baseline syndrome into public law,<sup>10</sup> arguing that successful public regulatory regimes can *cause* a shifting baseline syndrome—a *regulatory shifting baseline syndrome*. This syndrome arises when the laws created to correct a particular societal problem are so successful that, after some time passes, citizens, politicians, courts, administrative agencies, and legislatures forget that the regulatory regime is, in fact, still functioning—that is, that dismantling the existing regulatory requirements will cause the original problem to recur. The syndrome thus distorts public estimation of the regulatory regime’s continuing existential value.

The United States now has a large collection of generation-spanning regulatory regimes. However, the success of a public law regime can become so (apparently) complete that the relevant policymakers come to believe (or at least

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<sup>8</sup> *Id.*

<sup>9</sup> See discussion *infra* Part I.

<sup>10</sup> “Public law,” for purposes of this discussion, refers to the statutes, regulations, and policies that both regulate government itself and operate to protect society as a whole from problems that arise at scales too large to deal with effectively through private law mechanisms, such as contracting, insurance, or tort liability. Scholars generally distinguish “public law” from “private law” in two ways. The first approach defines public law as the law that involves and regulates the government itself. See, e.g., David Sloss, *Polymorphic Public Law Litigation: The Forgotten History of Nineteenth Century Public Law Litigation*, 71 WASH. & LEE L. REV. 1757, 1767-68 (2014) (applying a functional test to conclude that “[i]n public law cases, private actors ask courts to apply their judicial power to regulate the conduct of government actors” and defining “public law cases to comprise litigated cases involving a dispute between a private party and a government actor in which the private party alleges that the government actor committed, or threatened to commit, a violation of some established legal norm”); Ryan J. Cassidy, *Prefatory Remarks: Administrative Law and the First Annual Survey*, 5 WIDENER J. PUB. L. 617, 621-22 (1996) (defining “public law” to be “the law relating to the interaction between the state as a sovereign entity, its political subdivisions, and its citizens”). The second approach distinguishes public law from private law on the basis of the law’s subject matter. See, e.g., Philip J. McConaughay, *Reviving the “Public Law Taboo” in International Conflict of Laws*, 35 STAN. J. INT’L L. 255, 261, 300-304 (1999) (noting that “private law and public law are defined according to the categories or types of law traditionally within each: private law traditionally includes contracts, torts, property, and family law, while public law traditionally includes antitrust, securities, exchange controls, and most economic regulation”). This Article embraces both inflections of “public law” but relies more heavily on the latter, extending McConaughay’s emphasis on “public law’s focus on the public interest and preventing public harm,” *id.* at 302, to public health law and environmental and natural resources law.

argue) that its restrictions are no longer necessary. Under the influence of the regulatory shifting baseline syndrome, the (apparent) disappearance of the problem transforms initial respect for the regulatory regime (“it worked!”) into a psychological resetting of the regulatory baseline—essentially, “we no longer have to worry about *that* problem, and these laws are now an impediment to other things we want to do.” In particular, the disappearance of a specific problem can allow interest groups to re-frame the corrective regulatory regime as unnecessary, burdensome, expensive, or an infringement of private or states’ rights, lobbying the relevant decisionmakers to get rid of it. In short, once the perceived regulatory baseline shifts, policymakers may come to view the existing legal regime as no longer necessary and perhaps even harmful, opening those legal protections to re-evaluation. At the extreme, decisionmakers dismantle or weaken the now-devalued regimes—and history repeats itself.

Applying a regulatory shifting baseline syndrome analysis to evolving and often contentious public debates, therefore, has the potential to reveal an essential cultural component to the evolution of public law and policy: new generations forget the past, which can change the contours of the relevant political and legal debate over regulatory requirements and restrictions by altering perceptions of risk. This Article argues that identifying and resisting the regulatory shifting baseline syndrome offers one means of keeping needed public protections in place, avoiding the re-emergence of public commons problems that momentarily appear to have been “solved.” Specifically, awareness of the regulatory shifting baseline syndrome should prompt policymakers to reframe the status of the public problem under consideration from its objective manifestation (or lack thereof) to the human impulses driving the problem and its potential to recur. The relevant question for evaluating the regime’s continued existential value becomes: *What is likely to happen after removing the regime’s protections?*

Vaccine mandates provide a particularly timely, scientifically interesting, and complicated focus for studying the regulatory shifting baseline syndrome. The highly politicized controversy over vaccination mandates to combat the COVID-19 pandemic<sup>11</sup>—a resistance to vaccination *not* grounded in the regulatory shifting baseline syndrome—has obscured the syndrome’s operation in the United States concerning the more traditional suite of non-eradicated but vaccinatable diseases, such as measles and whooping cough. All vaccines come with risks,<sup>12</sup> but when the risk of dying from the vaccine-preventable disease is

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11 Toby Bolsen & Risa Palm, *Politicization and COVID-19 Vaccine Resistance in the U.S.*, 188 PROGRESS MOLECULAR BIOLOGY & TRANSLATIONAL SCI. 81, 81-84 (2022).

12 For example, “[a]ny vaccine can cause side effects. For the most part these are minor (for example, a sore arm or low-grade fever) and go away within a few days.” *Possible Side Effects from Vaccines*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/vaccines/vac-gen/side-effects.htm> [<https://perma.cc/34KF-CC97>] (last visited Apr. 2, 2020).

high, even crude risk-risk analyses favor vaccination at societal and individual levels. As a disease disappears, however, it becomes easy for individuals to subjectively perceive the most salient threat to be the vaccine itself, even if the societal public health need for vaccination programs has not changed.<sup>13</sup> Complicating regulatory decision-making, however, is the potential for successful vaccination programs to eradicate certain diseases,<sup>14</sup> actually changing the objective risk-risk calculus—that is, *actually* shifting the regulatory baseline. As a result, decisionmakers—from legislators to individual patients—need to understand whether the risk-risk analysis has really changed, as with smallpox, or only *appears* to have changed because vaccines effectively keep people from getting the disease.<sup>15</sup> Finally, vaccination programs require individuals to accept a (usually small) personal risk from the vaccine to eliminate disease risks both to themselves *and society as a whole*, in the form of herd immunity.<sup>16</sup> Therefore, distorted perceptions of risk from the vaccine perpetuate disease vulnerabilities not just for the individual making the vaccination decision but also for the community.

This Article proceeds in four parts. Part I introduces the shifting baseline syndrome in its original context, then transitions the psychology of fisheries regulation into the regulatory shifting baseline syndrome. Part II provides a brief

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13 Compare S. Krugman, *Measles and Mumps Immunization: Benefit Versus Risk Factors*, 43 DEV. BIOLOGICAL STANDARDIZATION 253 (1979) (concluding that the risks of measles and mumps outweigh the risks of the relatively new vaccines to prevent these diseases, which were reducing the disease incidence in the United States by 90 percent), with *Measles Vaccination: Myths and Facts*, INFECTIOUS DISEASES SOC. AM., <https://www.idsociety.org/public-health/measles/myths-and-facts/> [<https://perma.cc/CV5H-GABJ>] (last visited Apr. 12, 2022) (needing to dispel perceptions that the MMR vaccine causes autism or the measles disease in children).

14 Only smallpox has been declared eradicated *globally* as a result of vaccination. *Smallpox*, WORLD HEALTH ORG., [https://www.who.int/health-topics/smallpox#tab=tab\\_1](https://www.who.int/health-topics/smallpox#tab=tab_1) [<https://perma.cc/VS8V-NKSF>] (last visited Apr. 12, 2022). However, vaccines can also eradicate diseases from particular geographic regions. For example, polio, rubella, and, until recently, measles have all been considered eradicated from the United States. Caroline Praderio, *4 Diseases that Have Been Eliminated in the United States in the Last 100 Years*, INSIDER.COM (Jan. 25, 2019, 12:13 PM), <https://www.insider.com/diseases-eliminated-united-states-vaccines-2019-1> [<https://perma.cc/MM9Y-5WDS>].

15 See, e.g., *14 Diseases You Almost Forgot About (Thanks to Vaccines)*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/vaccines/parents/diseases/forgot-14-diseases.html> [<https://perma.cc/C7KQ-8BR7>] (last visited May 8, 2020) (listing fourteen diseases such as polio, measles, whooping cough, mumps, and diphtheria that Americans forget about but still require vaccination for).

16 “Herd immunity occurs when a large portion of a community (the herd) becomes immune to a disease, making the spread of disease from person to person unlikely. As a result, the whole community becomes protected—not just those who are immune.” *Herd Immunity and COVID-19 (Coronavirus): What You Need to Know*, MAYO CLINIC (Dec. 17, 2021), <https://www.mayoclinic.org/diseases-conditions/coronavirus/in-depth/herd-immunity-and-coronavirus/art-20486808> [<https://perma.cc/M4AM-YSRD>].



history of vaccines and the changes to disease risk that vaccines have accomplished, noting that public health is a form of a commons resource where individual choices can affect the well-being of society at large. In Part III, this Article examines the vaccination regulatory shifting baseline syndrome in the United States. Part IV explores legal reactions to drops in vaccination rates for traditional vaccine-preventable diseases and new COVID-19 vaccination mandates. It suggests that the U.S. Supreme Court's COVID-19 decisions may be opening a path that privileges the individual concerns surrounding vaccination over the larger public health goals of vaccination mandates—a legal path that, if taken fully, could allow the vaccination regulatory shifting baseline syndrome to operate with impunity. More generally, like the fisheries scientists who discovered the shifting baseline syndrome, this Article concludes that the re-animation of historical knowledge and cultural memory is an important corrective to the regulatory shifting baseline syndrome's contribution to vaccination resistance—and its operation in other regulatory regimes.

#### I. FROM THE SHIFTING BASELINE SYNDROME TO THE REGULATORY SHIFTING BASELINE SYNDROME

Humans forget things, both individually and in societal groups. Such forgettings can have significant consequences regarding when, how, and to what extent societies regulate to protect the general public good. For example, in natural resource management, one of the most well-studied and consequential phenomena resulting from this generational, cultural amnesia has been the shifting baseline syndrome. First identified in marine fisheries management, the shifting baseline syndrome results from a society's collective inability to remember historical ecological conditions accurately and compare them to existing conditions, skewing the focus and goals of natural resource management from what might be considered optimal.

This Part explores the origins of the shifting baseline syndrome in natural resource management to highlight the solutions identified to counteract it. Specifically, biologists and ecologists of all specialties have increasingly embraced the need to reconstruct historical states to recapture forgotten understandings of what is “natural.” These recaptured cultural memories can then inform contemporary regulation by, at the very least, identifying a wider range of potential management goals.

##### *A. Daniel Pauly's Insight: The Origin of the Shifting Baseline Syndrome*

In 1995, marine biologist Daniel Pauly coined the term “shifting baseline syndrome” to identify a key problem in fisheries management and modeling:

fisheries scientists were becoming separated “from the biologists studying marine or freshwater organisms and/or communities,” leading those scientists “to factor out ecological and evolutionary considerations from [their] models.”<sup>17</sup> The resulting myopic focus on fishers, fishing fleets, and catch numbers induced the syndrome, which

has arisen because each generation of fisheries scientists accepts as a baseline the stock size and species composition that occurred at the beginning of their careers, and uses this to evaluate changes. When the next generation starts its career, the stocks have further declined, but it is the stocks at that time that serve as a new baseline. The result obviously is a gradual shift of the baseline, a gradual accommodation of the creeping disappearance of resource species, and inappropriate reference points for evaluating economic losses resulting from overfishing, or for identifying targets for rehabilitation measures.<sup>18</sup>

What fisheries scientists needed, Pauly continued, was a method for incorporating historical observations of fisheries abundance and species diversity—generally dismissed as “anecdotes”—into contemporary fishery management policy, much as modern astronomers incorporate ancient observations “of sunspots, comets, supernovae, and other phenomena” and oceanographers continue to make use of physical data collected by mariners from at least the nineteenth century.<sup>19</sup> Citing two such historical looks at fishing impacts with approval, Pauly concluded that “[f]rameworks that maximize the use of fisheries history would help us to understand and to overcome—in part at least—the shifting baseline syndrome, and hence to evaluate the true social and ecological costs of fisheries.”<sup>20</sup>

*B. Use of the Shifting Baseline Syndrome in Fisheries Management and Other Ecological Contexts*

Pauly and other marine scientists have now documented the shifting baseline

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<sup>17</sup> Pauly, *supra* note 6, at 430.

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

<sup>20</sup> *Id.* In the first study, a scientist “compiled scattered observations of (male) anthropologists reporting on fishing in the South Pacific” to argue that women’s gleaning of food from coral reefs was more important than previously acknowledged. *Id.* (citation omitted). “The authors of the second study used the anecdotes in Farley Mowat’s *Sea of Slaughter* to infer that the biomass of fish and other exploitable organisms along the North Atlantic coast of Canada now represents less than 10% of that two centuries ago.” *Id.* (citations omitted).

syndrome in fisheries worldwide.<sup>21</sup> Moreover, these scientists have institutionalized the collection of historical fisheries data as one means of counteracting the syndrome,<sup>22</sup> essentially arguing that the more they can document the actual historical state of fisheries and marine ecosystems, the greater the chance that fisheries policies and catch limits will reflect both the true historical abundance of targeted fish species and the complexity of marine ecosystems.

As a concept, the shifting baseline syndrome has also moved beyond fisheries. In particular, researchers have acknowledged the importance of this syndrome in other areas of ecological regulation, such as endangered species protection,<sup>23</sup> ecological restoration,<sup>24</sup> and ecosystem management more generally.<sup>25</sup> Under this more generalized conception of “environmental generational amnesia,”<sup>26</sup> “each generation grows up being accustomed to the way

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21 E.g., Fiona T. Francis et al., *Shifting Headlines? Size Trends of Newsworthy Fishes*, 7 PEERJ e6395 (2019), <https://peerj.com/articles/6395/> [<https://perma.cc/S2KK-6FEB>]; H.A. Maia et al., *Shifting Baselines Among Traditional Fishers in São Tomé and Príncipe Islands, Gulf of Guinea*, 154 OCEAN & COASTAL MGMT. 133 (2018); Sean Berger, *Historical Ecology and Shifting Baseline Syndrome in the Kawartha Lakes, Ontario* (M.A. Thesis, Trent University, 2018), <https://search.proquest.com/docview/2042371835?pq-origsite=primo> [<https://perma.cc/SL7U7K5M>]; Maite Erauskin-Extramiana et al., *An Interdisciplinary Approach to Evaluate the Status of Large-Bodied Serranid Fisheries: The Case of Magdalena-Almejas Bay Lagoon Complex, Baja California Sur, Mexico*, 145 OCEAN & COASTAL MGMT. 21 (2017); Annabel A. Plumeridge & Callum M. Roberts, *Conservation Targets in Marine Protected Area Management Suffer from Shifting Baseline Syndrome: A Case Study on the Dogger Bank*, 116 MARINE POLLUTION BULL. 395 (2017); Tomaso Fortibuoni et al., *Common, Rare or Extirpated? Shifting Baselines for Common Angelshark, Squatina Squatina (Elasmobranchii: Squatinidae), in the Northern Adriatic Sea (Mediterranean Sea)*, 772 HYDROBIOLOGIA 247 (2016); A. J. Venkatachalam et al., *Changes in Frigate Tuna Populations on the South Coast of Sri Lanka: Evidence of the Shifting Baseline Syndrome from Analysis of Fisher Observations*, 20 MARINE & FRESHWATER ECOSYSTEMS 167 (2010); Samuel T Turvey et al., *Rapidly Shifting Baselines in Yangtze Fishing Communities and Local Memory of Extinct Species*, 24 CONSERVATION BIOLOGY 778 (2010); Cameron H. Ainsworth et al., *Evidence of Fishery Depletion and Shifting Cognitive Baselines in Eastern Indonesia*, 141 BIOLOGICAL CONSERVATION 848 (2008).

22 E.g., Dirk Zeller et al., *On Losing and Recovering Fisheries and Marine Science Data*, 29 MARINE POL’Y 69 (2005); Jeremy B.C. Jackson et al., *Historical Overfishing and the Recent Collapse of Coastal Ecosystems*, 293 SCI. 629 (2001).

23 E.g., Frank Sturges, *Humane Society of the United States v. Zinke* (D.C. Cir. 2017): *Shifting Baselines in the Endangered Species Act*, 43 HARV. ENV’T L. REV. 225 (2019).

24 Matias Guerrero-Gatica, Enrique Aliste & Javier Simonetti, *Shifting Gears for the Use of the Shifting Baseline Syndrome in Ecological Restoration*, 11 SUSTAINABILITY 1458 (2019).

25 Masashi Soga & Kevin J. Gaston, *Shifting Baseline Syndrome: Causes, Consequences, and Implications*, 16 FRONTIERS ECOLOGY & ENV’T 222 (2018).

26 P.H. Kahn, Jr., *Children’s Affiliations with Nature: Structure, Development, and the Problem of Environmental Generational Amnesia*, in CHILDREN AND NATURE: PSYCHOLOGICAL, SOCIOCULTURAL, AND EVOLUTIONARY INVESTIGATIONS 93, 93-94 (P.H. Kahn, Jr. & S.R. Kellert eds., 2002).

their environment looks and feels, and so, in a system experiencing progressive impoverishment, they do not recognize how degraded it has become over the course of previous generations.”<sup>27</sup> Multiple studies outside of fisheries have empirically demonstrated intergenerational differences in resource perception, from bird species in Yorkshire, to deforestation in the Beni, Bolivia, to water availability and quality in Alaska.<sup>28</sup> These studies indicate that the shifting baseline syndrome operates in regulatory regimes to keep ecosystems in impoverished states.<sup>29</sup> However, they also suggest that when historical reconstructions can take hold and correct those shifted perceptions, more productive management decisions and even, in some cases, restoration become possible. Arguably, therefore, “the fundamental driver of [the shifting baseline syndrome] is the lack, or paucity, of relevant historical data on the natural environment.”<sup>30</sup> “Without reliable historical environmental data, people cannot infer whether long-term environmental changes have occurred, nor to what extent, and so they have little choice but to define baselines according to their own knowledge and experiences . . . .”<sup>31</sup>

Finally, legal scholars have argued that emerging historical insights into ecosystem change from these biological and ecological reconstructions should broadly inform current marine management policy and law.<sup>32</sup> Moreover, historical reflection on the law’s influence on a particular fishing industry over time can suggest improvements to the regulation of that industry.<sup>33</sup> Even Pauly himself published in a law review to argue that the historical evidence of dramatic reductions in marine fish stocks necessitates the legal creation of marine reserves and the elimination of subsidies to fishers.<sup>34</sup> However, those perceptions have not yet been translated to the workings of law itself.

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27 Soga & Gaston, *supra* note 25, at 222.

28 *Id.* at 223.

29 Guerrero-Gatica et al., *supra* note 24, at 1460; Soga & Gaston, *supra* note 25, at 222.

30 Soga & Gaston, *supra* note 25, at 224.

31 *Id.*

32 E.g., Eric A. Bilsky, *Conserving Marine Wildlife Through World Trade Law*, 30 MICH. J. INT’L L. 599, 602-03 (2009); Robin Kundis Craig, *Taking Steps Toward Marine Wilderness Protection? Fishing and Coral Reef Marine Reserves in Florida and Hawaii*, 34 MCGEORGE L. REV. 155, 157 (2003); Robin Kundis Craig, *Taking the Long View of Ocean Ecosystems: Historical Science, Marine Restoration, and the Oceans Act of 2000*, 29 ECOLOGY L. Q. 649, 697-702 (2002).

33 Danielle Ringer et al., *For Generations to Come? The Privatization Paradigm and Shifting Social Baselines in Kodiak, Alaska’s Commercial Fisheries*, 98 MARINE POL’Y 97 (2018).

34 Daniel Pauly, *Unsustainable Marine Fisheries*, 7 SUSTAINABLE DEV. L. & POL’Y 10, 10-11 (2006).

*C. From Ecology to Regulatory Regimes: The Regulatory Shifting Baseline Syndrome*

In the regulatory shifting baseline syndrome, a longstanding regulatory regime is so successful that its success makes its existence appear unnecessary (i.e., the regulatory baseline appears to have shifted because the problem the regime addressed has apparently gone away). Like the fisheries shifting baseline syndrome, therefore, the regulatory shifting baseline syndrome induces lawmakers and the general public to wrongly evaluate the value and accomplishments of the current measures. In the regulatory shifting baseline syndrome, however, generational amnesia allows the original problem to re-emerge, harming overall public welfare.

The complications come in identifying exactly when the syndrome is operating because some regulatory regimes do become outdated and need to change. This section elucidates the three elements of the regulatory shifting baseline syndrome, which include: (1) generational amnesia; and (2) a longstanding regulatory regime focused on curbing individual human behaviors or impulses that collectively are likely to undermine the public good; (3) that is so successful that it renders the original problem non-salient, or at least considerably less salient, to both politicians and lawmakers. It also argues that identifying the syndrome in operation requires a greater appreciation of public law regimes as cultural memory institutions.

*1. Generational Amnesia*

The shifting baseline syndrome has always been a product of subjective human perception and psychology rather than objective reality; in fact, the syndrome is what allows humans to ignore that changing reality. However, the syndrome's grounding in psychology means that there is no reason that various forms of time-lapsed amnesia would not be an important factor in managing human behavior in areas besides fisheries and ecological conservation. Indeed, commenters have concluded that the syndrome has been at work in everything from personal weight gain<sup>35</sup> to government and business leadership<sup>36</sup> to perceptions of well-being in old age.<sup>37</sup>

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35 Randy Olson, *Slow Motion Disaster Below the Waves*, L.A. TIMES (Nov. 17, 2002 12:00 AM PT), <https://www.latimes.com/archives/la-xpm-2002-nov-17-op-olson17-story.html> [https://perma.cc/P4HM-PZSS] ("If your ideal weight used to be 150 pounds and now it's 160, your baseline—as well as your waistline—has shifted.").

36 Art Petty, *Leadership and Shifting Baseline Syndrome*, GOV'T EXEC. (Apr. 28, 2017), <https://www.govexec.com/management/2017/04/leadership-and-shifting-baseline-syndrome/137276/> [https://perma.cc/T32N-Z2DH].

37 Jiska Cohen-Mansfield, *The Shifting Baseline Theory of Well-Being: Lessons from Across*

To deal with these multiplying applications of “shifting baseline syndrome,” conservation biologists helpfully have identified two forms of the syndrome: generational amnesia and personal amnesia.<sup>38</sup> Like Pauly’s original characterization of the shifting baseline syndrome in fisheries, this Article is more interested in generational amnesia, which “describes individuals setting their perceptions from their own experience and failing to pass their experience on to future generations. Thus, as observers leave a system, the population’s perception of normality up-dates and past conditions are forgotten.”<sup>39</sup> This form of the shifting baseline syndrome “is a cautionary tale referring to changing human perceptions of biological systems due to loss of experience about past conditions.”<sup>40</sup>

## 2. *Public Law as a Cultural Memory Institution*

In ecology, one prominent proffered solution to the shifting baseline syndrome is to reconstruct historical conditions with greater accuracy. Nevertheless, one should always be cautious in hoping that more information will change people’s minds about public policy.<sup>41</sup> Even in ecological studies, scientists recognize that “the availability of (even very good) empirical evidence has not always been sufficient to convince people of historical trends in environmental conditions.”<sup>42</sup>

Nevertheless, legal regimes can also benefit from historical reconstruction; moreover, efforts to identify and correct the *regulatory* shifting baseline syndrome may have an advantage over efforts to correct *ecological* shifting baseline syndromes. While ecological change might have many causes,<sup>43</sup> and historical accounts of prior bounty might be dismissed as exaggerated tall tales,<sup>44</sup>

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*the Aging Spectrum*, in UNDERSTANDING WELL-BEING IN THE OLDEST OLD 46, 46-64 (Leonard W. Poon & Jiska Cohen-Mansfield eds., Cambridge Univ. Press 2011), <https://doi.org/10.1017/CBO9780511920974.005> [<https://perma.cc/2SRP-PMNE>].

38 S.K. Papworth et al., *Evidence for Shifting Baseline Syndrome in Conservation*, 2 CONSERVATION LETTERS 93, 93 (2009).

39 *Id.* (citations omitted). In contrast, “Personal amnesia describes individuals updating their own perception of normality; so that even those who experienced different previous conditions believe that current conditions are the same as past conditions.” *Id.*

40 *Id.*

41 E.g., Elizabeth Kolbert, *Why Facts Don’t Change Our Minds*, THE NEW YORKER (Feb. 19, 2017), <https://www.newyorker.com/magazine/2017/02/27/why-facts-dont-change-our-minds> [<https://perma.cc/U7LJ-4X9B>]; Timothy D. Hanks & Christopher Summerfield, *Perceptual Decision Making in Rodents, Monkeys, and Humans*, 93 NEURON 15, 22 (2017).

42 Soga & Gaston, *supra* note 25, at 224.

43 Katharina E. Fabricius & Glenn De’ath, *Identifying Ecological Change and Its Causes: A Case Study on Coral Reefs*, 14 ECOLOGICAL APPLICATIONS 1448, 1448 (2004).

44 Loren McClenachan et al., *The Importance of Surprising Results and Best Practices in Historical Ecology*, 65 BIOSCI. 932, 932-33, 938 (2015),

there is no escaping that *humans* alone create regulatory regimes. Therefore, the fact that past legislatures, regulatory agencies, and other policymakers bothered to engage in this labor is inescapable evidence that they thought something was wrong.

In this very real sense, public law *is* historical knowledge. Its persistence over time renders it a cultural memory institution—a record of *why* a community has legally protected itself in the ways it has. “Memory institutions are social entities that select, document, contextualize, preserve, index, and thus canonize elements of humanity’s culture, historical narratives, [and] individual[] and collective memories.”<sup>45</sup> Traditional and paradigmatic memory institutions include archives, museums, and libraries; more contemporary additions include the various “networked memory institutions” of the internet and social media.<sup>46</sup> However, statutes and regulatory regimes, together with the histories of their creation, are also memory institutions.<sup>47</sup>

Unfortunately, the status of public legal regimes as memory institutions is underappreciated, particularly within the law itself.<sup>48</sup> To be sure, the examination of statutory purpose remains a bedrock touchstone of statutory interpretation, and courts continue to examine statutory history<sup>49</sup> and even legislative history<sup>50</sup> in the

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<https://academic.oup.com/bioscience/article/65/9/932/237568> [https://perma.cc/R5KF-CEKR].

45 Guy Pessach, *[Networked] Memory Institutions: Social Remembering, Privatization and Its Discontents*, 26 CARDOZO ARTS & ENT. L.J. 71, 73 (2008) (citing ARCHIVES, DOCUMENTS AND INSTITUTIONS OF SOCIAL MEMORY: ESSAYS FROM THE SAWYER SEMINAR (Francis X. Blouin, Jr. & William G. Rosenberg eds., 2006); REPRESENTING THE NATION: A READER—HISTORIES, HERITAGE AND MUSEUMS (David Boswell & Jessica Evans eds., 1999)).

46 *Id.*

47 Notably, the European Union is dealing with the opposite problem in the form of so-called “memory laws,” which seek to reify a particular interpretation or perspective on history. Thus, “[m]emory laws’ enshrine state-approved interpretations of crucial historical events and promote certain narratives about the past, by banning, for example, the propagation of totalitarian ideologies or criminalising expressions which deny, grossly minimize, approve, or justify acts constituting genocide or crimes against humanity, as defined by international law.” Council of Europe, *‘Memory Laws’ and Freedom of Expression* 1 (July 2018), <https://rm.coe.int/factsheet-on-memory-laws-july2018-docx/16808c1690> [https://perma.cc/2GZ2-WXCC]. However, the use of law to actively *construct* cultural memory, as Europe justly worries about, is a different enterprise than the one advocated in this Article: the recognition that statutes and regulations created to address public problems constitute contextually situated records *of* cultural memory.

48 In contrast, historians often find the laws of earlier times to be valuable resources in reconstructing historical cultural norms or in establishing the bases of later reform and evolution. *E.g.*, Michael M. Sheehan, *Marriage Theory and Practice in the Conciliar Legislation and Diocesan Statutes of Medieval England*, 40 MEDIEVAL STUD. 408, 408-60 (1978).

49 Anita S. Krishnakumar, *Statutory History*, 108 VA. L. REV. 263, 265-68 (2022).

50 *E.g.*, *Cnty. of Maui, v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1468-69, 1471-72, 1476 (2020) (emphasizing Congress’s purposes in interpreting the Clean Water Act and including an examination of legislative history); *Gundy v. United States*, 139 S. Ct. 2116, 2126 (2019) (noting that “beyond context and structure, the Court often looks to ‘history [and] purpose’ to divine the

process. However, the process of statutory construction occurs *within* the regulatory regime itself and assumes its continued legitimacy. This assumption is evident in many canons of statutory construction, but it becomes an interpretive *goal* in the canon of constitutional avoidance. The “principle of constitutional avoidance is focused on statutory interpretation, calling for statutes to be interpreted to avoid constitutional problems.”<sup>51</sup> According to the U.S. Supreme Court, this canon “is a tool for choosing between competing plausible interpretations of a statutory text, resting on the reasonable presumption that Congress did not intend the alternative which raises serious constitutional doubts.”<sup>52</sup> When limited, as the Court mandates, to interpretations of the statute that are objectively reasonable, the canon thus operates to keep the statute from being declared unconstitutional<sup>53</sup>—that is, to legitimate its continuing existence.

The cultural memory at issue in this Article, in contrast, operates at a higher scale, focusing not (or not just) on what the particular legal instruments (statutes, regulations) *mean* but instead on actually assessing their continuing value to society. When that assessment occurs under the influence of the regulatory shifting baseline syndrome, rather than with full appreciation of the cultural memory embedded in the regulatory regime, the syndrome can induce a distorted cost-benefit analysis based on its ability to warp perceptions of risk. Victims of the syndrome compare the continuing costs of the regulatory regime to apparently disappearing benefits—benefits that have become invisible because

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meaning of language”) (quoting *Maracich v. Spears*, 570 U.S. 48, 76 (2013)) (internal quotation marks omitted); *Environmental Defense v. Duke Energy Corp.*, 549 U.S. 561, 576 (2007) (relying on legislative history); *McCreary Cnty. v. ACLU of Ky.*, 545 U.S. 844, 861-63 (2005) (discussing the importance of legislative purpose in statutory interpretation).

51 Kate Aschenbrenner Rodriguez, *Immigration Detention: Erosion or Reinforcement of a Theory of Immigration Exceptionalism?*, 57 IDAHO L. REV. 719, 724 (2021).

52 *Clark v. Martinez*, 543 U.S. 371, 381-82 (2005) (citations omitted).

53 *Id.* at 381. Of course, if a court chooses to focus on an implausible or objectively unreasonable interpretation, that focus could become the basis for operationalizing the regulatory shifting baseline syndrome. One example was the Supreme Court’s use of the constitutional avoidance canon to arguably narrow the scope of the Clean Water Act’s jurisdiction contrary to congressional intent, precipitating an ongoing controversy over “waters of the United States” that is now moving into its third decade. *See Solid Waste Agency of N. Cook Cnty. v. U.S. Army Corps of Eng’rs*, 531 U.S. 159, 172-73 (2001) (overturning the Migratory Bird Rule’s extension of Clean Water Act jurisdiction on the grounds that “[w]here an administrative interpretation of a statute invokes the outer limits of Congress’ power, we expect a clear indication that Congress intended that result . . . . This concern is heightened where the administrative interpretation alters the federal-state framework by permitting federal encroachment upon a traditional state power”) (citation omitted); *Rapanos v. United States*, 547 U.S. 715, 732-39 (plurality), 782-83 (Kennedy, J., concurring in the judgment), 810 (Stevens, J., dissenting) (2006) (fracturing the Justices over the proper test for Clean Water Act jurisdiction); *Sackett v. U.S. Env’t Prot. Agency*, 8 F.4th 1075 (9th Cir. 2021), *cert. granted in part sub nom.*, 142 S. Ct. 896, 896 (2022) (granting certiorari to decide the question of “[w]hether the Ninth Circuit set forth the proper test for determining whether wetlands is ‘waters of the United States’ under the Clean Water Act, 33 U.S.C. § 1362(7)”).



no one has seen the complete problem in quite a while. Instead of acknowledging that the regime is what keeps the problem at bay, victims of the syndrome tend to proclaim “Problem solved!” and dismantle the very regulatory machinery that makes that perception possible—completely ignoring the cultural memory function of law in the process.

### 3. *The Emergence of the Regulatory Shifting Baseline Syndrome*

The regulatory shifting baseline syndrome often emerges in debates over whether a regulatory regime that is at least partially controversial still serves its original (or any desirable) function. The syndrome allows the relevant decisionmakers<sup>54</sup> to evaluate that regime—rhetorically, economically, and politically—through an assumption (admittedly itself often politicized) of changed conditions. The resulting distorted evaluation creates a persuasive, if inaccurate, narrative of why the regime is no longer necessary. Importantly, the persuasive force of a syndrome-based argument often derives at least in part from a subtle shift in focus, moving from an analysis of the regulatory regime’s effect on human behavior to an emphasis on the changes that have occurred in objective reality. Victims of the regulatory shifting baseline, therefore, ignore the fact that changing human behavior is what caused the change in lived experience.

The U.S. Supreme Court’s 2013 Voting Rights Act decision *Shelby County v. Holder*<sup>55</sup> provides a significant example of a syndrome-based argument, including this analytical shift in focus. In this 5-4 decision, the majority held unconstitutional the Act’s coverage formula and preclearance requirements.<sup>56</sup> As it explained, “Section 5 of the Act required States to obtain federal permission before enacting any law related to voting—a drastic departure from basic principles of federalism. And § 4 of the Act applied that requirement only to some States—an equally dramatic departure from the principle that all States enjoy equal sovereignty.”<sup>57</sup> The question, as the majority framed it, was whether the Act remained constitutional despite changed conditions:

Nearly 50 years later, [the Voting Rights Act’s requirements] are still in effect; indeed, they have been made more stringent, and are now scheduled to last until 2031. There is no denying,

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54 Who holds the relevant decisionmaking power, and hence the operative realm of the regulatory shifting baseline syndrome, can vary by regime and the relevant legal authorities that surround it. For voting rights, the relevant sphere of the syndrome is often five Justices of the U.S. Supreme Court. For vaccines, it is often state legislatures, local public health departments, and individual members of the general public.

55 570 U.S. 529 (2013).

56 *Id.* at 556-57.

57 *Id.* at 534-35.

however, that the conditions that originally justified these measures no longer characterize voting in the covered jurisdictions. By 2009, “the racial gap in voter registration and turnout [was] lower in the States originally covered by § 5 than it [was] nationwide.” Since that time, Census Bureau data indicate that African–American voter turnout has come to exceed white voter turnout in five of the six States originally covered by § 5, with a gap in the sixth State of less than one half of one percent. See Dept. of Commerce, Census Bureau, Reported Voting and Registration, by Sex, Race and Hispanic Origin, for States (Nov. 2012) (Table 4b).

At the same time, voting discrimination still exists; no one doubts that. The question is whether the Act’s extraordinary measures, including its disparate treatment of the States, continue to satisfy constitutional requirements. As we put it a short time ago, “the Act imposes current burdens and must be justified by current needs.”<sup>58</sup>

This emphasis on changed circumstances, therefore, provided a perfect context in which the regulatory shifting baseline could emerge.

Contrary to some characterizations,<sup>59</sup> the *Shelby County* majority did not forget why Congress enacted the Voting Rights Act in the first place. It acknowledged, for example, why Congress had singled out certain states for special treatment: “In the 1890s, Alabama, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Virginia, began to enact literacy tests for voter registration and to employ other methods designed to prevent African-Americans from voting,” and as courts struck down these measures, “[s]tates came up with new ways to discriminate,” effectively preventing registration of Black voters.<sup>60</sup> Instead, the majority shifted the focus from the Act’s ability to curb legislatures’ impulses to discriminate to changes in objective reality (i.e., higher rates of African American voters). With this shift in focus, it concluded that the Act’s distinctions among states based on historic practices had served their purposes—specifically, that the states whose voting laws were still subject to federal approval had come into line with, or even improved upon, the rest of

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<sup>58</sup> *Id.* at 535–36 (quoting *Nw. Austin Mun. Util. Dist. No. One v. Holder*, 557 U.S. 193, 203–04 (2009)).

<sup>59</sup> *E.g.*, Joel Heller, *Shelby County and the End of History*, 44 U. MEMPHIS L. REV. 357, 357–59, 385 (2013).

<sup>60</sup> *Shelby County*, 570 U.S. at 536 (citing *South Carolina v. Katzenbach*, 383 U.S. 301, 310 (1966)).

the country in terms of Black voter registration.<sup>61</sup> In the majority's view, "things have changed dramatically."<sup>62</sup> The Act had done—emphasis on the past tense—its job,<sup>63</sup> and the objective regulatory baseline had, according to the majority, (permanently) moved in constitutionally significant ways.<sup>64</sup>

In contrast, the dissenters (and, in their view, Congress) appreciated the fact that the Voting Rights Act's preclearance requirements *were still doing* their job—that is, that objective reality was as good as it was exactly because the Act "facilitate[s] completion of the impressive gains thus far made" and, hinting at the human impulse problem, "guard[s] against backsliding."<sup>65</sup> The decision's

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61 *Id.* at 547-49.

62 *Id.* at 547.

63 Specifically, according to the Court:

Coverage today is based on decades-old data and eradicated practices. The formula captures States by reference to literacy tests and low voter registration and turnout in the 1960s and early 1970s. But such tests have been banned nationwide for over 40 years. And voter registration and turnout numbers in the covered States have risen dramatically in the years since. Racial disparity in those numbers was compelling evidence justifying the preclearance remedy and the coverage formula. There is no longer such a disparity.

In 1965, the States could be divided into two groups: those with a recent history of voting tests and low voter registration and turnout, and those without those characteristics. Congress based its coverage formula on that distinction. Today the Nation is no longer divided along those lines, yet the Voting Rights Act continues to treat it as if it were.

*Id.* at 551. See also K. Sabeel Rahman, *Domination, Democracy, and Constitutional Political Economy in the New Gilded Age: Toward a Fourth Wave of Legal Realism?*, 94 TEX. L. REV. 1329, 1335 (2016) ("The Court's dismantling of the Voting Rights Act in *Shelby County* can be understood as an argument that underlying structural political inequalities that may have justified preclearance are no longer present, and thus ordinary political competition, like market competition, is sufficient to ensure freedom of choice and basic political equality.").

64 Other scholars have also explicitly characterized the *Shelby County* majority's opinion as reflecting the Justices' perception of an objectively shifted baseline. See Diane S. Sykes, *Minimalism and Its Limits*, 2015 CATO SUP. CT. REV. 17, 32 (noting that "the Court had transparently signaled its discomfort with the coverage formula, which was based on a decades-old baseline that did not reflect changes in voting and discriminatory election practices when Congress reauthorized the Act in 2006").

65 *Shelby County*, 570 U.S. at 559-60 (Ginsburg, J., dissenting). As Joel Heller has more extensively described the survival of this impulse in areas still suffering from the burdensome memory of past discrimination:

An awareness of the long history of voting discrimination on account of race in a jurisdiction may affect the attitudes of present-day policymakers towards race and the right to vote, and thus may influence the types of voting policies that they enact. One possibility is that local or state officials charged with setting

aftermath supports their conclusion that the most important regulatory baseline at issue—the impulses of the designated state legislatures to discriminate—had *not* changed significantly. The Brennan Center for Justice notes that “[w]ithin 24 hours of the ruling, Texas announced that it would implement a strict photo ID law. Two other states, Mississippi and Alabama, also began to enforce photo ID laws that had previously been barred because of federal preclearance.”<sup>66</sup> In a 2018 report, the Center further concluded that “the Supreme Court’s 2013 *Shelby County v. Holder* ruling, which neutered the strongest legal protection against voting discrimination, *changed the landscape*. A flood of new barriers to voting that would have otherwise been blocked were implemented, and newly unfettered legislatures were incentivized to press forward with additional restrictions.”<sup>67</sup>

In the terms of this Article, the *Shelby County* majority justified its constitutional conclusion under the influence of a regulatory shifting baseline syndrome. Of course, it is possible—perhaps even probable—that the Justices in the majority did not sincerely believe that the Voting Rights Act was no longer necessary. However, whether the majority Justices actually believed that the Voting Rights Act no longer helped to keep voting discrimination in check, or

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voting policies and election procedures will ignore any burden that a policy has on minority voters as simply a natural or unavoidable phenomenon. Centuries of precedent exist for inequality in this area of civic life, and these policymakers know that their not-too-distant predecessors in office enacted and administered such policies with a large degree of indifference, or even support, in their communities.

Heller, *supra* note 59, at 385-86.

<sup>66</sup> *The Effects of Shelby County v. Holder*, BRENNAN CTR. FOR JUSTICE (Aug. 6, 2018), <https://www.brennancenter.org/our-work/policy-solutions/effects-shelby-county-v-holder> [https://perma.cc/5R75-YMJ8].

<sup>67</sup> Wendy Weise & Max Feldman, *The State of Voting 2018*, BRENNAN CENTER FOR JUSTICE, at 5 (2018) (emphasis added), [https://www.brennancenter.org/sites/default/files/2019-08/Report\\_State\\_of\\_Voting\\_2018.pdf](https://www.brennancenter.org/sites/default/files/2019-08/Report_State_of_Voting_2018.pdf) [https://perma.cc/4HGH-FE36]. The fact that, by 2018, a total of twenty-three states had enacted more restrictive voting laws that disparately impacted people of color and other vulnerable populations arguably suggests that federal preclearance requirements should apply to *more* states rather than none. *See id.* at 5-7; *see also* Franita Tolson, *The Law of Democracy at a Crossroads: Reflecting on Fifty Years of Voting Rights and Judicial Regulation of the Political Thicket*, 43 FLA. STATE U. L. REV. 345, 350 (2016) (“[M]ost states have used their power over voter qualifications, which is significantly broader in the wake of *Shelby County*, to sharply define and limit who can participate in elections. In the last few years alone, states have enacted dozens of laws that make it considerably harder to vote . . .”). Notably, the *Shelby County* decision also shifted the burden of proving the discriminatory impacts of voting laws from the covered governments (who had to show nondiscrimination) to disenfranchised voters, and it effectively shielded municipal ordinances related to voting from much scrutiny at all. Sam Levine & Ankita Rao, *In 2013 the Supreme Court Guttled Voting Rights—How Has it Changed the US?*, THE GUARDIAN (June 25, 2020, 13:14 EDT), <https://www.theguardian.com/us-news/2020/jun/25/shelby-county-anniversary-voting-rights-act-consequences> [https://perma.cc/CD3H-PSEK].

whether instead they were rhetorically deploying the syndrome to ground their legal argument, is largely irrelevant: the syndrome's general existence made the logic of their decision possible, regardless of whether this particular argument was the result of honest belief or dishonest rhetoric in pursuit of a particular political outcome. Generational amnesia, in other words, can run the gamut from actual forgetfulness to willful burying of a particular cultural memory. The result remains the same: by refusing to acknowledge the deeper cultural memory embedded in the statute—in the case of the Voting Rights Act, the knowledge that, in the absence of federal oversight, many state legislatures will discriminate against minorities trying to exercise their rights to vote—decisionmakers can release the human impulse that the statute formerly constrained, allowing it full license once again.

*Shelby County* thus also illustrates the importance of the cultural memory function of public laws. Indeed, the very existence of public laws on a particular subject should remind those empowered to change them—politicians, judges, legislators, and occasionally the broader citizenship—that there was, in fact, a historical problem that might recur if the correcting regulatory regime does not remain in place.

This unfortunate outcome is particularly likely if the regulatory regime targets basic human impulses that collectively undermine the public good. These regimes embed cultural memories of important lessons that we have learned ourselves. Some of the most important of these lessons are that individual behaviors can cumulatively damage society as a whole. Whether multitudinous (e.g., polluters) or domineering (e.g., nineteenth-century monopolists), individual behavioral impulses playing out on a national stage can destabilize or otherwise deleteriously affecting various aspects of the public commons.<sup>68</sup> These

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68 While the fit is not always exact, this Article refers to many of the public goods (however aspirational some of them remain) of U.S. society—equal access to voting and other aspects of political processes, a stable economy, public health, a clean environment—as commons resources or common-pool resources in the sense that Elinor Ostrom and her co-authors defined it: “natural and human-constructed resources in which (i) exclusion of beneficiaries through physical and institutional means is especially costly, and (ii) exploitation by one user reduces resource availability for others.” Elinor Ostrom et al., *Revisiting the Commons: Local Lessons, Global Challenges*, 284 *SCI.* 278, 278 (1999). Public law often operates as an exclusion by limiting how individual entities (persons, corporations, political parties, even in some circumstances governments) can affect or operate with the relevant commons and often is quite costly (economically and politically) to enact, promulgate, build capacity for implementing, and enforce. Nevertheless, in the absence of those regimes, exploitation for the benefit of those individual entities can put the entire public good at risk for everyone. “Commons” terminology then aptly undergirds a discussion of the regulatory shifting baseline syndrome because it describes situations in which governance is an important option for mediating the oft-occurring tensions between the drives and motivations of individual entities and the best interests of the public as a whole. As Garrett Hardin famously recognized in 1968, the unrestrained drives of individuals can lead to

experiential lessons, memorialized in regulatory regimes, are unlikely to lose their value unless and until human nature fundamentally transforms. Acknowledging the regulatory shifting baseline syndrome can thus illuminate and inform discussions of whether and how to reform public law regimes.

*D. How Acknowledging the Regulatory Shifting Baseline Syndrome Improves Regulatory Regime Evaluation*

There are, of course, excellent reasons to change established regulatory regimes. For example, evolving conceptions of ethics and morality may undermine past legal regimes; in the United States, the abolition of slavery<sup>69</sup> and the progressive elimination of the death penalty<sup>70</sup> are two prominent examples of this motivation for legal change.

Acknowledging the cultural memory embedded in public laws aids in the evaluation of whether a regulatory regime *should* change. Indeed, that acknowledgment serves two different governance goals. First, as memory institutions, laws and regulations are reminders of how their drafters understood the world and the problem at hand, allowing would-be reformers to assess whether those understandings remain objectively valid. Thus, when social ethics, norms, and standards of morality change from those embedded in earlier laws, the reconstruction of that evolution provides one principled basis for changing the law.

Changes in embedded scientific understanding or technological capacity can provide another principled basis for evolving a legal regime. As one contemporary example, environmental and natural resources scholars have argued extensively that the increasing impacts of climate change demand a re-evaluation and replacement of regulatory regimes that assume the stationarity of ecological and social-ecological systems,<sup>71</sup> including new approaches to climate

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tragedies for the larger society. Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243, 1243-45 (1968). However, “tragedies of the commons are real, but not inevitable”—although the governance challenges multiply as the scale of the commons increases. Ostrom et al., *supra*, at 281-82.

<sup>69</sup> U.S. CONST., amend XIII, § 1.

<sup>70</sup> *E.g.*, *Kennedy v. Louisiana*, 554 U.S. 407, 413 (2008) (holding that the Eighth Amendment bars Louisiana from imposing the death penalty as a sanction for the rape of a child when the crime did not result, and was not intended to result, in the death of the child); *Atkins v. Virginia*, 536 U.S. 304, 321 (2002) (holding unconstitutional Virginia’s application of the death penalty to the mentally disabled); *Thompson v. Oklahoma*, 487 U.S. 815, 838 (1988) (holding that imposition of the death penalty is unconstitutional when the defendant committed the murder at age fifteen); *Woodson v. North Carolina*, 428 U.S. 280, 286-305 (1976) (holding that North Carolina’s mandatory death penalty for first-degree murder is unconstitutional).

<sup>71</sup> *See, e.g.*, Karrigan Börk, *Guest Species: Rethinking Our Approach to Biodiversity in the Anthropocene*, 2018 UTAH L. REV. 169; MELINDA HARM BENSON & ROBIN KUNDIS CRAIG, *THE END OF SUSTAINABILITY: RESILIENCE AND THE FUTURE OF ENVIRONMENTAL GOVERNANCE IN THE*

change adaptation.<sup>72</sup> The regimes in need of significant amendment to acknowledge these evolved scientific understandings include most of the natural resources, public lands, and environmental statutes adopted throughout the twentieth century.<sup>73</sup> The crucial cultural memory embedded in these public laws is the outdated model of ecosystems prevalent in scientific discourse when Congress and state legislatures adopted them.<sup>74</sup> Recovering that cultural memory illuminates both that our understanding of how complex systems behave has changed significantly since the 1970s, undermining these statutes' regulatory premises,<sup>75</sup> and that climate change is accelerating systemic change, undermining these statutes' continuing abilities to function productively.<sup>76</sup> In other words, acknowledging this first cultural memory function of law helps law- and policymakers evaluate when legal regimes need to change.

More unusually, this Article explores the *second* governance function served by acknowledging that public law is a form of cultural memory: improved evaluation of whether apparently outdated legal regimes should remain in place.

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ANTHROPOCENE (2017); Kalyani Robbins, *The Biodiversity Paradigm Shift: Adapting the Endangered Species Act to Climate Change*, 27 FORDHAM ENV'T L. REV. 57 (2015); Lance H. Gunderson et al., *Escaping a Rigidity Trap: Governance and Adaptive Capacity to Climate Change in the Everglades Social Ecological System*, 51 IDAHO L. REV. 127 (2014); ROBIN KUNDIS CRAIG, COMPARATIVE OCEAN GOVERNANCE: PLACE-BASED PROTECTIONS IN AN ERA OF CLIMATE CHANGE (2012); Victor B. Flatt, *Adapting Laws to a Changing World: A Systemic Approach to Climate Change Adaptation*, 64 FLA. L. REV. 269 (2012); Robin Kundis Craig, "Stationarity Is Dead"—Long Live Transformation: Five Principles for Climate Change Adaptation Law, 34 HARV. ENV'T L. REV. 9 (2010); Alejandro E. Camacho, *Assisted Migration: Redefining Nature and Natural Resource Law under Climate Change*, 27 YALE J. REGUL. 171 (2010); J.B. Ruhl, *Climate Change Adaptation and the Structural Transformation of Environmental Law*, 40 ENV'T L. 363 (2010); Robert L. Glicksman, *Ecosystem Resilience to Disruptions Linked to Global Climate Change: An Adaptive Approach to Federal Land Management*, 87 NEB. L. REV. 833 (2009); J.B. Ruhl, *Climate Change and the Endangered Species Act: Building Bridges to the No-Analog Future*, 88 B.U. L. REV. 1 (2008).

<sup>72</sup> See generally J.B. Ruhl & Robin Kundis Craig, *4°C*, 106 MINN. L. REV. 191 (2021) (exploring the massive governance dislocations that will most likely occur as a result of the need to adapt to the currently most likely trajectories of climate change).

<sup>73</sup> Alejandro E. Camacho & Robert L. Glicksman, *Legal Adaptive Capacity: How Program Goals and Processes Shape Federal Land Adaptation to Climate Change*, 87 U. COLO. L. REV. 711, 743-806 (2016) (assessing the federal public lands statutes); CRAIG, *supra* note 71, at 47-65, 91-169 (assessing current legal approaches to marine protected areas); Craig, *supra* note 71, at 31-40 (assessing pollution control and natural resources statutes); Camacho, *supra* note 71, at 188-210 (assessing species-related and public lands statutes); Ruhl, *Structural Transformation*, *supra* note 71, at 391-433 (assessing a broad swath of environmental and natural resources statutes).

<sup>74</sup> Melinda H. Benson, *New Materialism: An Ontology for the Anthropocene*, 59 NAT. RES. J. 251, 261 (2019); BENSON & CRAIG, *supra* note 71, at 31, 57, 165-66; Craig, *supra* note 71, at 32.

<sup>75</sup> BENSON & CRAIG, *supra* note 71, at 56-70; Craig, *supra* note 71, at 39-40; Camacho, *supra* note 71, at 179-88.

<sup>76</sup> Craig, *supra* note 71, at 46-48; Camacho, *supra* note 71, at 188-210; Ruhl, *Structural Transformation*, *supra* note 71, at 391-433; Glicksman, *supra* note 71, at 839-51.

Specifically, when legal regimes exist to curb human impulses and behaviors that cumulatively damage society, those regimes serve as important reminders that removing existing restraints is likely to re-create old problems. Thus, even in the environmental context, an evolved understanding of system dynamics and climate change impacts does not change the fact that pollution control regimes—that is, restraints on historically demonstrated human tendencies to contaminate commons resources (air, rivers, lakes, land, the ocean) with toxins and other damaging pollutants—remain critical protections for human health and environmental quality in the twenty-first century.<sup>77</sup> Failure to heed these reminders that humans often misbehave if left to their own devices allows the regulatory regime to fall victim to the regulatory shifting baseline syndrome.

Notably, whether the generational amnesia that allows the regulatory shifting baseline to emerge will occur varies by regulatory context—and, as the Voting Rights Act example suggests, some generational amnesia is more likely to be politically induced than naturally emerging. Long-existing regulatory regimes that seem equally incorporated into societal norms differentially fall victim to the regulatory shifting baseline syndrome, often because of differences in the continuing saliency of the original problems. For example, despite their eighty-year existence, child labor laws remain socially and politically salient. Until the early twentieth century, most children in working-class families worked long hours, often under dangerous conditions, and from very young ages.<sup>78</sup> Congress began to intervene as early as 1906,<sup>79</sup> culminating in the passage of the Fair Labor Standards Act in 1938.<sup>80</sup> As is true for many new regulatory regimes affecting business, employers initially resisted the restrictions on child labor, necessitating additional restrictions and improved enforcement.<sup>81</sup> However, “since roughly the late 1980s, child labor in its various aspects has largely

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<sup>77</sup> Craig, *supra* note 71, at 45-46.

<sup>78</sup> CONG. RSCH. SERV., CHILD LABOR IN AMERICA: HISTORY, POLICY, AND LEGISLATIVE ISSUES 1 (updated 2013), [https://www.everycrsreport.com/files/20131118\\_RL31501\\_008741c7351fd72ae2a262198ba9c0e44921a60a.pdf](https://www.everycrsreport.com/files/20131118_RL31501_008741c7351fd72ae2a262198ba9c0e44921a60a.pdf) [<https://perma.cc/69JM-6XNF>]. See also Joanna Grisinger, *Book Review*, 28 L. & HIST. REV. 649, 649-50 (2011) (reviewing JAMES D. SCHMIDT, *INDUSTRIAL VIOLENCE AND THE LEGAL ORIGINS OF CHILD LABOR* (2010)) (describing “nineteenth-century producerist ideology, which valued individuals as workers. For Appalachian working families, clear lines between childhood and adulthood were absent. Instead, children were brought into the workplace to perform tasks appropriate to their size and skill level, growing into their roles as workers as they became adults”).

<sup>79</sup> However, its early efforts were often unsuccessful. See, e.g., *Constitutional Law—Federal Child Labor Law Invalid*, 27 YALE L.J. 1092, 1092-93 (1918) (summarizing the then-recent Supreme Court decision).

<sup>80</sup> CONG. RSCH. SERV., *supra* note 78, at 2-5. The Fair Labor Standards Act is codified at 29 U.S.C. §§ 201-219, and the child labor prohibitions are found in Section 212.

<sup>81</sup> *Id.* at 5 (citation omitted).



disappeared from the policy scene; the issue is often viewed as a remnant of an earlier period in American history.”<sup>82</sup>

Nevertheless, despite the apparent normification of child labor prohibitions and restrictions, no group strongly advocates that these restrictions have become unnecessary. In the terms of this Article, successive generations of U.S. society have not forgotten that child labor restrictions continue to provide important protections to children. That memory remains accessible partly because evidence indicates that many employers still violate regulations on child labor, especially for adolescents and immigrant children;<sup>83</sup> in other words, the impulse to exploit children and their labor has never been completely controlled. Moreover, advocates for children often view these public law protections as incomplete,<sup>84</sup> with organizations like the American Federation of Teachers seeking to extend existing restrictions to agriculture, which the Fair Labor Standards Act largely exempts from child labor restrictions.<sup>85</sup>

In contrast, the non-COVID-19 diseases for which many vaccination mandates exist in the United States have lost their cultural and political salience

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<sup>82</sup> *Id.* at 1.

<sup>83</sup> Priyanka Boghani, *Q&A: America's "Invisible" Child Labor Problem*, PBS FRONTLINE (April 24, 2018), <https://www.pbs.org/wgbh/frontline/article/qa-americas-invisible-child-labor-problem/> [<https://perma.cc/CLW2-HSE6>]; Alana Semuels, *How Common Is Child Labor in the U.S.?*, THE ATLANTIC (Dec. 15, 2014), <https://www.theatlantic.com/business/archive/2014/12/how-common-is-child-labor-in-the-us/383687/> [<https://perma.cc/P9HM-VRPW>]; Kimberly J. Rauscher et al., *US Child Labor Violations in the Retail and Service Industries: Findings From a National Survey of Working Adolescents*, 98 AM. J. PUB. HEALTH 1693, 1693-98 (2008), <https://ajph.aphapublications.org/doi/10.2105/AJPH.2007.122853> [<https://perma.cc/8BV2-X3LW>]; Ana Maria Echiburu, *Immigration Raid Results in Charges Filed Against Iowa Slaughterhouse for Child Labor Violations*, 14 PUB. INT. L. REP. 93, 94 (2008) (“Child labor laws in Iowa prohibit children below the age of eighteen from working in a meatpacking plant. Employees in meat packing plants are exposed to dangerous machines and chemicals and often have to make thousands of cuts every day with sharp knives, risking lacerations, nerve damage, or muscle damage. The brutal environment of a meatpacking plant is not an appropriate place for children. Yet, the May 12 immigration raid of Agriprocessors in Iowa, uncovered underage employees working in such conditions, which is something Americans are unaccustomed to hearing about in the United States.”); Susan Makdisi, *Child Labor*, 4 LOY. POVERTY L.J. 281, 281 (1998) (“Imagine a place where children go to work on farms, in factories, on the streets, or in an industry, working five to sixteen hours a day, five to seven days a week . . . . This happens all over the world, including America and other developed countries.”).

<sup>84</sup> E.g., Meret Thali, *Missing Childhood: How Cultural Norms and Government Systems Continue to Support Child Labor in Agriculture*, 20 DRAKE J. AGRIC. L. 453, 454-55 (2015) (“This widespread general acceptance and promotion of children working in agriculture in the United States has led to federal legislation that has failed to protect these children, even though they are working in what is considered one of the three most dangerous sectors of labor.”).

<sup>85</sup> *Child Labor in the United States*, AM. FED. TEACHERS, <https://www.aft.org/community/child-labor-united-states> [<https://perma.cc/T5X5-UZ9C>] (last visited Jan. 23, 2021).

precisely because vaccination programs in the twentieth century were so successful: it is a rare person in the United States who has watched a family member die of measles, whooping cough, tetanus, polio, or smallpox. Before exploring the erosion of these traditional vaccination mandates as a regulatory shifting baseline syndrome problem, however, this Article first provides some background on vaccine development, vaccine regulation, and vaccination mandates.

## II. A BRIEF HISTORY OF VACCINES, VACCINE REGULATION IN THE UNITED STATES, AND VACCINES' ABILITY TO AFFECT THE DISEASE RISK BASELINE

### A. *The Development of Vaccines*

Immunization practices have existed since the eighteenth century, when English physician Edward Jenner used cowpox to inoculate patients against smallpox.<sup>86</sup> Louis Pasteur added the human rabies vaccine in 1885, along with the concept of virus attenuation,<sup>87</sup> which allows humans to develop an effective immune response to the disease without contracting it. Polio, diphtheria, tetanus, and pertussis (whooping cough) vaccines followed by 1946, but injectable vaccines were not invented until 1955.<sup>88</sup>

With this last invention, vaccination programs backed by public health regulatory regimes became important public health initiatives in the United States.<sup>89</sup> Since the inception of these vaccination programs, “scientists [have] widely consider[ed] immunization to be one of the greatest public health achievements of the 20th century, and experts in medical science and research agree that timely immunization is vital to staying healthy.”<sup>90</sup>

### B. *Federal Regulation of Vaccines in the United States*

#### 1. *Vaccine Safety and the FDA*

No vaccine is risk-free,<sup>91</sup> even when properly manufactured and

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86 Stephanie F. Cave, *The History of Vaccinations in the Light of the Autism Epidemic*, 14 ALT. THERAPIES HEALTH & MED. 54, 54 (2008), [https://www.researchgate.net/publication/23556900\\_The\\_history\\_of\\_vaccinations\\_in\\_the\\_light\\_of\\_the\\_autism\\_epidemic](https://www.researchgate.net/publication/23556900_The_history_of_vaccinations_in_the_light_of_the_autism_epidemic) [https://perma.cc/JG89-DBYT].

87 *Id.*

88 *Id.*

89 *Id.*

90 *My Child's Risk*, IVACCINATE (2019), <https://ivaccinate.org/child-safety/> [https://perma.cc/478Y-7Y9S].

91 Kevin M. Malone & Alan R. Hinman, *Vaccination Mandates: The Public Health Imperative and Individual Rights*, in LAW IN PUBLIC HEALTH PRACTICE 262, 273 (Richard A. Goodman et al. eds., 2007) (citing Hardin, *supra* note 68, at 1243-48).

administered.<sup>92</sup> For example, the oral polio vaccine can cause paralysis.<sup>93</sup> More commonly, the person getting vaccinated faces risks of an immune reaction, ranging from redness and soreness at the vaccine site to a severe allergic reaction that leads to anaphylactic shock and death.<sup>94</sup>

In the United States currently, the regulatory regime that balances the risks of personal harm against a new vaccine's effectiveness in protecting public health is the Food & Drug Administration's (FDA's) evaluation under the drug provisions of the federal Food, Drug, and Cosmetic Act (FDCA).<sup>95</sup> The federal government has been regulating vaccines since the passage of the 1902 Biologics Control Act,<sup>96</sup> which gave the Marine Health Service's Laboratory of Hygiene (transformed in 1930 into the National Institutes of Health) authority to regulate vaccines for safety, purity, and potency.<sup>97</sup> "The Laboratory established standards and licensed smallpox and rabies vaccines," then in 1934 added standards for efficacy.<sup>98</sup>

Congress enacted the Food, Drug, and Cosmetic Act in 1938.<sup>99</sup> Under the Act, a "drug" includes any article "intended for use in the diagnosis, cure, mitigation, treatment, *or prevention* of disease" in humans.<sup>100</sup> Since 1962, the FDCA has prevented the introduction of any new drug in the United States without the FDA's approval.<sup>101</sup> However, this regime did not include vaccines until 1972,<sup>102</sup> when "the Division of Biologics Standards was moved from the National Institutes of Health to the FDA."<sup>103</sup> To get the FDA's approval to market a new vaccine, the manufacturer must prove that it is both safe and effective.<sup>104</sup>

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92 Mary Beth Neraas, *The National Childhood Vaccine Injury Act of 1986: A Solution to the Vaccine Liability Crisis?*, 63 WASH. L. REV. 149, 149 (1988) (citations omitted).

93 *Id.* at 150.

94 National Vaccine Injury Compensation Program, HEALTH RESOURCES & SERVS. ADMIN., <https://www.hrsa.gov/vaccine-compensation/index.html> [<https://perma.cc/HH8R-WAT6>] (last visited Jan. 2021).

95 21 U.S.C. §§301-399a.

96 Linda Bren, *The Road to the Biotech Revolution—Highlights from 100 Years of Biologics Regulation*, FDA CONSUMER 1, 1 (2006), <https://www.fda.gov/files/about%20fda/published/The-Road-to-the-Biotech-Revolution--Highlights-of-100-Years-of-Biologics-Regulation.pdf> [<https://perma.cc/6WKU-W6AA>]; Julie B. Milstein, *Regulation of Vaccines: Strengthening the Science Base*, 25 J. PUB. HEALTH POL'Y 173, 174 (2004).

97 Milstein, *supra* note 96, at 174, 176.

98 *Id.* at 176.

99 Act of June 25, 1938, 52 Stat. 1040, *codified at* 21 U.S.C. §§ 301-399gg.

100 21 U.S.C. § 321(g)(1) (emphasis added).

101 *Id.* § 355(a).

102 Milstein, *supra* note 96, at 177.

103 *Id.*

104 21 U.S.C. § 355(b).

## 2. *Federal Immunization Programs*

The federal contribution to immunization most often consists of financing programs that make widespread vaccination cheap or free. For example, the first federal vaccination program targeted polio,<sup>105</sup> and the Poliomyelitis Vaccination Assistance Act of 1955<sup>106</sup> spurred free mass vaccination by providing federal funds to states to pay for the vaccines.<sup>107</sup> The Act also allowed the Surgeon General to initiate federal polio vaccination delivery.<sup>108</sup>

The federal government continues to financially support vaccination programs, especially childhood vaccination programs, on a significant scale. Most notably: “Since 1962, the federal government has supported childhood vaccination programs through a grant program administered by the CDC. These ‘317’ grants, named for the authorizing statute, support purchase of vaccine for free administration at local health departments and support immunization delivery, surveillance, and communication and education.”<sup>109</sup> Between these 317 grants and the 1994 Vaccines for Children program (discussed below), “[a]s of 2000, the CDC purchased over half the childhood vaccine administered in the United States . . . .”<sup>110</sup>

### C. *State Vaccination Requirements for School Attendance*

#### 1. *State Authority to Require Vaccines*

The key regulatory components of vaccine program efficacy in the United States are state requirements that children be vaccinated before they can attend public schools, and often private schools and daycare facilities as well.<sup>111</sup> Massachusetts enacted the first U.S. law mandating vaccination in 1809, then passed the first school vaccination requirement in 1855 “to prevent smallpox transmission in schools.”<sup>112</sup> In 1905, in *Jacobson v. Massachusetts*,<sup>113</sup> the U.S.

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<sup>105</sup> *Id.*

<sup>106</sup> Act of August 12, 1955, Pub. L. No. 377, 69 Stat. 704.

<sup>107</sup> *Id.* §§ 3-6.

<sup>108</sup> *Id.* § 7.

<sup>109</sup> Malone & Hinman, *supra* note 91, at 268.

<sup>110</sup> *Id.*

<sup>111</sup> *State Vaccination Requirements*, CTRS. FOR DISEASE CONTROL & PREVENTION (updated Nov. 15, 2016), <https://www.cdc.gov/vaccines/imz-managers/laws/state-reqs.html> [<https://perma.cc/T8GF-EA2R>]; see also Malone & Hinman, *supra* note 91, at 269 (“School vaccination laws have played a key role in the control of vaccine-preventable diseases in the United States.”).

<sup>112</sup> Malone & Hinman, *supra* note 91, at 269, 271 (citation omitted).

<sup>113</sup> 197 U.S. 11 (1905). For the story of how resistance to smallpox vaccine mandates and the five-year stretch of smallpox epidemics that started in 1900 led to this Supreme Court case, see generally MICHAEL WILLRICH, *POX: AN AMERICAN STORY* (2012).

Supreme Court upheld Massachusetts' (and other states') authority to mandate vaccinations, removing federal constitutional Due Process obstacles to state vaccination laws. Specifically, the Court acknowledged that states have broad police power to protect public health<sup>114</sup> and that Jacobson's Fourteenth Amendment liberty protections did not insulate him from those requirements:

the liberty secured by the Constitution of the United States to every person within its jurisdiction does not import an absolute right in each person to be, at all times and in all circumstances, wholly freed from restraint. There are manifold restraints to which every person is necessarily subject for the common good. On any other basis organized society could not exist with safety to its members. Society based on the rule that each one is a law unto himself would soon be confronted with disorder and anarchy. Real liberty for all could not exist under the operation of a principle which recognizes the right of each individual person to use his own, whether in respect of his person or his property, regardless of the injury that may be done to others.<sup>115</sup>

Moreover, "[u]pon the principle of self-defense, of paramount necessity, a community has the right to protect itself against an epidemic of disease which threatens the safety of its members."<sup>116</sup>

Seventeen years later, the U.S. Supreme Court explicitly addressed the City of San Antonio, Texas's school vaccination mandate in *Zucht v. King*.<sup>117</sup> Unlike in *Jacobson*, there was no imminent threat of contagious disease in San Antonio; nevertheless, public officials barred Rosalyn Zucht from attending public and private schools because she did not have the required vaccination certificate and refused to get vaccinated.<sup>118</sup> Relying on *Jacobson*, the Court found against Zucht, concluding that "it is within the police power of a state to provide for compulsory vaccination" and "that a state may, consistently with the federal Constitution, delegate to a municipality authority to determine under what conditions health regulations shall become operative."<sup>119</sup>

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<sup>114</sup> *Jacobson*, 197 U.S. at 24-25.

<sup>115</sup> *Id.* at 26.

<sup>116</sup> *Id.* at 27.

<sup>117</sup> 260 U.S. 174 (1922).

<sup>118</sup> *Id.* at 175.

<sup>119</sup> *Id.* at 176 (citations omitted).

## 2. *School Vaccination Mandates*

By the beginning of the twentieth century, when the Court considered *Jacobson*, “nearly half the states had requirements for children to be vaccinated before they entered school. By 1963, when the measles vaccine became available, 20 states, the District of Columbia, and Puerto Rico had such laws, with a variety of vaccines being mandated.”<sup>120</sup>

Measles became a critical focus in expanding state vaccination mandates in the later 1960s, as the United States sought to eradicate that disease, and “[t]hese experiences demonstrated that mandatory vaccination could be enforced and was effective.”<sup>121</sup> In 1977, public health officials pursued a nationwide Childhood Immunization Initiative to increase measles vaccination levels in children to 90 percent by 1979, an effort that induced even more states to enact and enforce school vaccination requirements.<sup>122</sup>

School vaccination requirements, when strictly enforced, are quite effective in preventing disease and creating herd immunity.<sup>123</sup> As a result, “[b]y the 1980-1981 school year, all 50 states had laws covering students first entering school”<sup>124</sup>—that is, when they first enrolled in kindergarten or first grade. By 1983, all fifty states required measles vaccinations,<sup>125</sup> and “[a]s of the 1998-1999 school year, all states but four (Louisiana, Michigan, South Carolina, and West Virginia) had requirements covering all grades from kindergarten through 12th grade.”<sup>126</sup> By that point, “[t]he requirements covered diphtheria toxoid and polio, measles, and rubella vaccines in all 50 states; 49 states required tetanus toxoid, 46 required mumps vaccine, 44 required pertussis vaccine, and 28 required hepatitis B vaccine.”<sup>127</sup> In 2000, the Task Force on Community Preventive Services, an independent body that evaluates the effectiveness of public health preventive interventions, recommended mandatory vaccination requirements to reduce drastically the incidence of vaccine-preventable diseases.<sup>128</sup>

### D. *Real Shifts in Baseline Disease Risk from Vaccination: Smallpox and Polio*

Public health professionals recognize that vaccination programs like school

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120 Malone & Hinman, *supra* note 91, at 269 (citation omitted).

121 *Id.* at 269 (citations omitted).

122 *Id.* (citations omitted).

123 *Id.* at 270 (citation omitted).

124 *Id.* at 270 (citation omitted).

125 *Id.* at 271 (citation omitted).

126 *Id.* (citations omitted).

127 *Id.* (citations omitted).

128 *Id.* (citing Task Force on Community Preventive Services, *Recommendations Regarding Interventions to Improve Vaccination Coverage in Children, Adolescents, and Adults*, 18 AM. J. PREVENTIVE MED. 92, 92-96 (2000)).

vaccination mandates can shift both the objective societal disease regulatory baseline and the subjective individual risk-risk calculation in getting vaccinated.<sup>129</sup> Vaccines thus present an interesting case study of the regulatory shifting baseline syndrome because successful vaccination programs create *both* legitimate and illegitimate shifts in the regulatory baseline. Legitimate shifts in disease baselines result after vaccines eradicate or radically attenuate a disease risk at a societal level. More commonly, however, successful vaccination programs simply prevent people from getting a disease that nevertheless remains a societal risk. The *perception* that the disease has “gone away” illegitimately distorts individual evaluations of risk from the vaccine itself, promoting individual propensities to avoid vaccination.

Smallpox is the most famous example of a legitimately shifted vaccination baseline. This disease killed about 30 percent of the roughly 50 million people globally who contracted the disease each year before vaccination programs began in earnest in the 1950s.<sup>130</sup> However, as a result of these vaccination efforts, the last natural case of smallpox occurred in 1977.<sup>131</sup> The variola virus that causes smallpox now exists only in laboratories, and “[r]outine smallpox vaccination among the American public stopped in 1972 after the disease was eradicated in the United States.”<sup>132</sup>

A less dramatic example of a legitimate regulatory baseline shift occurred with polio. The polio vaccine exists in two primary forms. The oral polio vaccine is more effective at preventing polio but carries a risk of paralysis, which occurs at a rate of about 1 in every 2.4 million doses of the vaccine.<sup>133</sup> The inactivated polio vaccine, in contrast, is less effective at preventing polio but carries *no* risk of paralysis.<sup>134</sup> Of course, polio itself can also cause paralysis and death, and so long as poliovirus circulated in the United States, the risk of paralysis from the oral vaccine “was certainly outweighed by the much larger risk for paralysis from wild polioviruses . . . .”<sup>135</sup> However, by 1991, successful vaccination programs eradicated wild poliovirus from the Western Hemisphere.<sup>136</sup> As a result, given the greatly reduced risk of contracting polio from wild poliovirus, in 2000, the CDC’s Advisory Committee on Immunization Practices recommended that

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<sup>129</sup> *Id.* at 263.

<sup>130</sup> WORLD HEALTH ORG., BUGS, DRUGS, AND SMOKE: STORIES FROM PUBLIC HEALTH 3-5 (2011), <https://apps.who.int/iris/handle/10665/44700> [<https://perma.cc/5UXA-H8X4>].

<sup>131</sup> *Id.* at 3.

<sup>132</sup> *Vaccine Basics*, CTRS. FOR DISEASE CONTROL & PREVENTION (updated July 12, 2017), <https://www.cdc.gov/smallpox/vaccine-basics/index.html> [<https://perma.cc/P8MP-GXEC>].

<sup>133</sup> Malone & Hinman, *supra* note 91, at 264.

<sup>134</sup> *Id.*

<sup>135</sup> *Id.*

<sup>136</sup> *Id.*

public health officials eliminate the risk of *vaccination-caused* paralysis by switching from the oral vaccine to the inactivated polio vaccine.<sup>137</sup> Reduced risks of getting the disease justified switching to the safer but less effective vaccine.

More commonly, however, vaccination programs do *not* eradicate a disease, even within a geographically restricted area like the United States. Instead, successful vaccination programs achieve herd immunity. Specifically, when a sufficiently large number of individuals choose to get vaccinated against a particular disease, herd immunity emerges.<sup>138</sup> Herd immunity, in turn, protects those individuals who either cannot be vaccinated or who fall within the small percentage of vaccinated individuals who do not develop a strong enough immune response to keep them from getting the disease.<sup>139</sup>

However, herd immunity lasts only so long as the relevant population remains vaccinated at sufficiently high percentages.<sup>140</sup> The exact percentage varies from disease to disease:

Measles, for example, spreads so easily that an estimated 95% of a population needs to be vaccinated to achieve herd immunity. In turn, the remaining 5% have protection because, at 95% coverage, measles will no longer spread. For polio, the threshold is about 80%.

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Viruses like the flu, however, are different from measles in that they mutate over time, meaning antibodies from a previous infection won't provide protection for long. That's why the flu vaccine is reformulated each year to match what is expected to be the dominant strain in the coming season.<sup>141</sup>

The coronavirus also mutates, complicating the achievement of herd immunity, but experts still hope that an 85 percent vaccination rate could result

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<sup>137</sup> *Id.*

<sup>138</sup> Katie M. Palmer, *Why Did Vaccinated People Get Measles at Disneyland? Blame the Unvaccinated*, WIRED (Jan. 8, 2015, 6:08 AM), <https://www.wired.com/2015/01/vaccinated-people-get-measles-disneyland-blame-unvaccinated/> [<https://perma.cc/7E4W-2A5H>]; Malone & Hinman, *supra* note 91, at 264 (describing herd immunity and how the percentage of the vaccinated population required varies by disease).

<sup>139</sup> Palmer, *supra* note 138; *Herd Immunity and COVID-19 (Coronavirus): What You Need to Know*, MAYO CLINIC (Dec. 17, 2021), <https://www.mayoclinic.org/diseases-conditions/coronavirus/in-depth/herd-immunity-and-coronavirus/art-20486808> [<https://perma.cc/4S7C-7V75>].

<sup>140</sup> *Herd Immunity: An Explanation*, YALEMED. (updated May 21, 2021), <https://www.yalemedicine.org/news/herd-immunity> [<https://perma.cc/6XPY-ZRET>].

<sup>141</sup> *Id.*



in herd immunity.<sup>142</sup>

The continuing need to keep vaccination rates high for most vaccine-preventable diseases is the critical medical fact that allows the illegitimate versions of the vaccination regulatory shifting baseline syndrome to emerge. Specifically, the achievement of herd immunity and a low incidence of disease can shift the public's perception of risk from the disease to the vaccine itself. The next Part explores the emergence of this syndrome in the United States regarding traditional vaccine-preventable diseases, especially measles.

### III. THE VACCINATION REGULATORY SHIFTING BASELINE SYNDROME IN THE UNITED STATES

The United States declared measles eliminated within its borders in 2000.<sup>143</sup> Nevertheless, between mid-December 2014 and mid-February 2015, the Disney theme parks in Anaheim, California, appeared to be ground zero of a new measles outbreak. The Centers for Disease Control and Prevention (CDC) documented at least 125 measles cases in the United States that winter, 110 of which involved California residents.<sup>144</sup> Of the California residents, forty-nine were unvaccinated, including twelve infants too young to be vaccinated; another forty-seven patients' vaccination status was unknown or undocumented; and a handful of others were undervaccinated (i.e., lacking the full course of shots).<sup>145</sup> Notably, of the thirty-seven vaccine-eligible patients who definitely were not vaccinated, twenty-eight had purposely chosen to remain unvaccinated "because of personal beliefs."<sup>146</sup>

Measles outbreaks in the United States spiked again in 2019, with the CDC confirming 1,282 cases in thirty-one states.<sup>147</sup> Noting that "[t]his is the greatest number of cases reported in the U.S. since 1992," it emphasized again that "[t]he majority of cases were among people who were not vaccinated against

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<sup>142</sup> *Id.*

<sup>143</sup> Morgan Krakow, *A Tourist Infected with Measles Visited Disneyland and Other Southern California Hot Spots in Mid-August*, WASH. POST (Aug. 24, 2019, 10:36 AM MDT), <https://www.washingtonpost.com/health/2019/08/24/tourist-infected-with-measles-visited-disneyland-other-southern-california-hotspots-mid-august/> [https://perma.cc/4HDA-3N7R].

<sup>144</sup> Jennifer Zipprich et al., *Measles Outbreak—California, December 2014–February 2015*, CTRS. FOR DISEASE CONTROL & PREVENTION MORBIDITY & MORTALITY WEEKLY REP. (Feb. 20, 2015), <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6406a5.htm> [https://perma.cc/64GP-NVV9].

<sup>145</sup> *Id.*

<sup>146</sup> *Id.*

<sup>147</sup> *Measles Cases and Outbreaks*, CTRS. FOR DISEASE CONTROL & PREVENTION (updated Dec. 2, 2020), <https://www.cdc.gov/measles/cases-outbreaks.html> [https://perma.cc/6BA8-9L9B].

measles.”<sup>148</sup> Vaccination is a particularly important protection for measles because, in part because it spreads through the air, “[m]easles is one of the most contagious viruses in the world. Around 90 percent of unvaccinated people exposed to the virus will contract the disease within seven to 21 days,” with death as one potential outcome.<sup>149</sup>

Measles has made a comeback in the United States and other countries because of “mistrust and misinformation campaigns about vaccine safety,”<sup>150</sup> a phenomenon known more colloquially as the Anti-Vaxxer Movement.<sup>151</sup> This Part examines the twentieth-century emergence of a vaccination regulatory shifting baseline syndrome in the United States.

*A. Initial Signals of a Vaccination Regulatory Shifting Baseline Syndrome: Vaccine Lawsuits and the Childhood Vaccine Injury Act of 1986*

*1. Vaccine Litigation*

As noted, vaccine “safety” is not absolute but instead requires the FDA to assess whether the vaccine’s benefits outweigh its risks. This calculus depends on many factors. The FDA might be willing to tolerate more individual risks and side effects if the vaccine prevents a particularly deadly or novel disease.<sup>152</sup> Any patient who has received warnings about contraindications and side effects from their doctor or pharmacy in connection with a prescription, flu vaccine, or now the new coronavirus vaccines has experienced firsthand the practical results of FDA risk-benefit balancing.

As a result of this balancing, individual risks usually remain for even the most important and effective vaccines: in any large population, a few people will have an adverse reaction to the vaccine. One of the first signs that members of the U.S. public were beginning to reject the public-oriented focus of vaccination programs<sup>153</sup> were the products liability torts lawsuits against vaccine

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<sup>148</sup> *Id.*

<sup>149</sup> Krakow, *supra* note 143.

<sup>150</sup> *Id.*

<sup>151</sup> See, e.g., Palmer, *supra* note 138 (noting that “most of the people stricken with Mickey Mouse measles do not understand how vaccines work, because they didn’t get them. The vast majority of the infected were unvaccinated against the disease, including kids who were too young for the shots and anti-vaxxers who chose against them. That’s how you get an outbreak”).

<sup>152</sup> See 21 U.S.C. § 355-1(a)(1) (laying out the risk-benefit analysis and many of the factors to consider).

<sup>153</sup> Miles E. Coleman, *An Overview of the National Childhood Vaccination Act*, 21 S.C. LAWYER 40, 40 (2010) (“Throughout the 20th century, as vaccination schedules prescribed more and earlier immunizations, there was a growing awareness of the potential dangers of vaccinations and an accompanying resistance to immunization. In response, Congress passed the National Childhood Vaccine Injury Act of 1986 . . .”).

manufacturers starting in the 1950s and escalating through the 1980s,<sup>154</sup> seeking personal injury damages for those individuals that vaccines harmed. These lawsuits began with the Cutter Incident, when Cutter Laboratories released a vaccine in which the virus had not been properly inactivated, despite following federally mandated manufacturing procedures.<sup>155</sup> Nearly 200 people were paralyzed, and ten people died after contracting polio from vaccines from these lots.<sup>156</sup> In 1955, the California Court of Appeals upheld a jury verdict that Cutter Laboratories was liable in tort for these injuries under implied warranty theories, even though the jury found that Cutter had not been negligent in producing the vaccine.<sup>157</sup> The proverbial tort floodgates had been opened, and vaccine litigation threatened to leave the United States without vaccine manufacturers.<sup>158</sup>

The *Cutter Laboratories* case was one of the most important cases creating strict products liability, and other vaccines soon became targets of tort litigation.<sup>159</sup> In particular, a 1974 medical research paper claimed that the pertussis (whooping cough) vaccine caused brain damage, changing vaccination policies worldwide.<sup>160</sup> In the United States, plaintiffs' attorneys "attacked vaccine makers, claiming that the pertussis vaccine caused epilepsy, mental retardation, learning disorders, unexplained coma, Reye's syndrome . . . , and sudden infant death syndrome."<sup>161</sup> By the late 1980s, hundreds of lawsuits had been filed seeking more than \$21 million in damages, and the cost of a single pertussis vaccine dose had increased from 17 cents to \$11.00.<sup>162</sup> Although researchers later proved the claims wrong, "the damage was done," and the number of manufacturers producing pertussis vaccine for children in the United States dropped from four to one—with that one subject to continuing million-dollar tort liability.<sup>163</sup>

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154 Neraas, *supra* note 92, at 151 ("Lawsuits against manufacturers rose from 24 in 1980 to approximately 150 in 1985.").

155 For an insightful history of the polio vaccines' development and the *Cutter Laboratories* litigation, see generally PAUL A. OFFIT, *THE CUTTER INCIDENT: HOW AMERICA'S FIRST POLIO VACCINE LED TO THE GROWING VACCINE CRISIS* (2005).

156 *Id.* at 89.

157 *Gottsdanker v. Cutter Laboratories*, 6 Cal. Rptr. 320, 322-24 (Cal. App. 1st Dist. 1955).

158 Vaccine Injury Compensation Programs, COLL. PHYSICIANS PHILA. (updated Jan. 17, 2018), <https://www.historyofvaccines.org/content/articles/vaccine-injury-compensation-programs> [<https://perma.cc/W3V9-6AEU>]; see also Neraas, *supra* note 92, at 152 ("Between 1966 and 1977, half the nation's vaccine manufacturers stopped producing and distributing vaccines. By 1985, only four commercial firms produced and distributed the primary vaccines used in compulsory vaccination programs.").

159 OFFIT, *supra* note 155, at 179-81.

160 *Id.* at 179-80.

161 *Id.* at 180-81.

162 *Id.* at 181.

163 *Id.* at 181-82.

## 2. *Dealing with the Vaccine Supply Crisis: The National Childhood Vaccine Injury Act of 1986*

As a result of vaccine injury litigation, the United States faced the distinct possibility that it would return to a non-vaccine state of public health, where “hundreds of thousands of children were routinely hospitalized, permanently harmed, or killed by vaccine-preventable diseases” each year.<sup>164</sup> Responding to this “vaccine liability crisis that has threatened the nation’s supply of childhood vaccines,”<sup>165</sup> Congress intervened with the National Childhood Vaccine Injury Act of 1986 (NCVIA), which established the National Vaccine Injury Compensation Program (VICP).<sup>166</sup> This program provides compensation to patients who are injured by listed vaccines<sup>167</sup> while insulating vaccine manufacturers from tort liability,<sup>168</sup> ensuring that vaccines remain available to the population at large. A person who receives a covered vaccine and suffers a recognized injury therefrom<sup>169</sup> can file a petition for recovery in the U.S. Court of Federal Claims,<sup>170</sup> receiving compensation as the Act allows.<sup>171</sup> According to the U.S. Department of Justice,

[o]ver the past 30 years, the VICP has succeeded in providing a less adversarial, less expensive, and less time-consuming system of recovery than the traditional tort system that governs medical malpractice, personal injury, and product liability cases. More than 6,000 people have been paid in excess of \$3.9 billion (combined) since the Program’s 1988 inception . . . [and] costly litigation against drug manufacturers and health care professionals who administer vaccines has virtually ceased.<sup>172</sup>

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<sup>164</sup> *Id.* at 182.

<sup>165</sup> Neraas, *supra* note 92, at 149.

<sup>166</sup> 42 U.S.C. §§ 300aa-10 to 300aa-23.

<sup>167</sup> *Id.* §§ 300aa-10(a), 300aa-11(c), 300aa-13(a).

<sup>168</sup> *Id.* § 300aa-22(b)(1); *Bruesewitz v. Wyeth LLC*, 562 U.S. 223, 232-33 (2011) (holding that the NCVIA preempts state tort law design defect claims).

<sup>169</sup> 42 U.S.C. § 300aa-14.

<sup>170</sup> *Id.* § 300aa-11.

<sup>171</sup> *Id.* § 300aa-15.

<sup>172</sup> *Vaccine Injury Compensation Program*, U.S. DEPT. OF JUSTICE (updated Sept. 24, 2018), <https://www.justice.gov/civil/vicp> [<https://perma.cc/FZ4D-BUDZ>].

*B. Vaccine Resistance, Anti-Vaxxers, and the Emergence of the Vaccination Regulatory Shifting Baseline Syndrome*

*1. Vaccine Hesitancy in the United States*

Resistance to vaccination has existed since inoculations were first invented. Indeed, skepticism regarding the efficacy and safety of the earliest inoculation practices was often fully justified, given the state of medical science and rather loose oversight of practitioners at the time.<sup>173</sup> For example, when smallpox was the disease of most significant concern:

In the late 1800s through the early 1900s, some parents responded to school vaccination laws by refusing to send their children to school, sending their children to private schools, wiping the vaccine from their children's arms following vaccination, attempting to fake vaccine scars, and refusing to comply with vaccination requirements. This resistance was driven in part by the risks of the smallpox vaccine and the risks of inoculation, which included the transmission of other diseases, including tetanus . . . . Opposition to vaccination became stronger during the early 1900s when a milder form of smallpox, variola minor, became the dominant strain. This strain rarely caused death, leading many to conclude that the vaccine was more dangerous than the disease it prevented.<sup>174</sup>

However, the United States has a long history of vaccine resistance rooted in issues other than legitimate concerns about the safety and efficacy of the vaccines themselves.<sup>175</sup> Many religions and religious leaders, for example, have actively discouraged vaccination: “fear of vaccines emerged in the 18th century. Religious figureheads often referred to them as ‘the devil’s work’ and actively spoke against them.”<sup>176</sup> Racism and racial mistrust have also played a role in

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<sup>173</sup> *The Anti-Vaccination Movement*, MEASLES & RUBELLA INITIATIVE, <https://measlesrubellainitiative.org/anti-vaccination-movement/> [https://perma.cc/T58Q-TUH4] (last visited Jan. 27, 2021).

<sup>174</sup> Douglas S. Dickema, *Personal Belief Exemptions for School Vaccination Requirements*, 35 ANN. REV. PUB. HEALTH 275, 278 (2014) (citations omitted).

<sup>175</sup> See, e.g., MICHAEL WILLRICH, POX: AN AMERICAN STORY 12 (2012) (noting that “reasonable health concerns do not alone explain the widespread opposition to compulsory vaccination at the turn of the twentieth century”).

<sup>176</sup> Olivia Benecke & Sarah Elizabeth DeYoung, *Anti-Vaccine Decision-Making and Measles Resurgence in the United States*, 6 GLOB. PEDIATRIC HEALTH 1 (2019); see also WILLRICH, *supra* note 175, at 12 (“Christian Scientists viewed compulsory vaccination as a violation of religious freedom.”).

vaccination resistance.<sup>177</sup> Personal liberty objections have long influenced resistance to vaccination in both England and the United States. For example, when England enacted the Vaccination Act in 1853, requiring vaccination against smallpox for infants over three months old and mandating penalties for noncompliance, several organizations formed to resist the new mandate, including London's Anti-Vaccination League.<sup>178</sup> In the United States, opposition to vaccination mandates reflected uneasiness over the increasing intrusion of government into private lives, arguably constituting one of the first civil liberty struggles.<sup>179</sup> "Parents also protested on the grounds that vaccination threatened the safety of their children, usurped their parental authority, and violated the bodily integrity of their children."<sup>180</sup>

Opposition to vaccines in the United States is generally categorized into two levels of severity. Some people are still resistant to vaccinating themselves and their children because of concerns about the safety of particular, or most vaccines.<sup>181</sup> Vaccine hesitancy thus refers to a spectrum of resistance levels to vaccines, and "[a] vaccine-hesitant person can delay, be reluctant but still accept, or refuse some or all vaccines."<sup>182</sup> An "anti-vaxxer," in contrast, is an individual who is opposed to *all* vaccines and vaccination requirements for reasons other than the perceived safety of the vaccine itself, including religious beliefs and assertion of personal liberty.<sup>183</sup> These individuals typically associate with the "anti-vaccination movement," or "anti-vaxxer movement," in an effort to prevent the use of vaccines to immunize people from certain contagious illnesses.<sup>184</sup>

While the spectrum of resistance is real, people along the entire spectrum often find justification for their resistance in misleading and false information that has made the personal risks from the vaccines themselves seem unduly high. As noted, "[i]n the 1970s, concern about the possibility of pertussis vaccine causing sudden infant death syndrome or infantile spasms led to debate about pertussis vaccination requirements, even though studies showed that the vaccine caused neither event."<sup>185</sup> Nevertheless, these fears led to a substantial expansion of vaccine resistance in the United Kingdom into the 1980s, "when parents

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177 WILLRICH, *supra* note 175, at 12.

178 *Id.*; *The Anti-Vaccination Movement*, *supra* note 173.

179 WILLRICH, *supra* note 175, at 13-24.

180 Diekema, *supra* note 174, at 278.

181 Ève Dubé et al., *Vaccine Hesitancy, Acceptance, and Anti-Vaccination: Trends and Future Prospects for Public Health*, 42 ANN. REV. PUB. HEALTH 175, 176-77 (2021).

182 *Id.* at 177.

183 *Id.*; Thomas Keegan & Rhiannon Edge, *It's Wrong to Assume that the Choice not to Vaccinate is Always Down to Ignorance*, THE CONVERSATION (Sept. 16, 2016), <https://theconversation.com/its-wrong-to-assume-that-the-choice-not-to-vaccinate-is-always-down-to-ignorance-123112> [<https://perma.cc/5JFP-H4TC>].

184 *The Anti-Vaccination Movement*, *supra* note 173.

185 Malone & Hinman, *supra* note 91, at 274.

increasingly refused to vaccinate their children against pertussis in response to a report that attributed 36 negative neurological reactions to the pertussis vaccine. This caused a decrease in the pertussis vaccine uptake in the United Kingdom from 81% in 1974 to 31% in 1980, eventually resulting in a pertussis outbreak . . . .”<sup>186</sup> Similarly, false connections to the onset of autism have helped to fuel the resistance to the measles vaccine, as the next section will discuss.

## 2. Vaccine Hesitancy and Measles

Measles is not the deadliest of infectious diseases. Even so, “[b]efore the introduction of measles vaccine in 1963 and widespread vaccination, major epidemics occurred approximately every 2–3 years and measles caused an estimated 2.6 million deaths each year.”<sup>187</sup> The world population in 1963 was a little over 3.211 billion people,<sup>188</sup> which would suggest that roughly one out of every 1,235 individuals on the planet died from measles *every year*. In contrast, the rate of severe allergic reactions to the MMR (mumps-measles-rubella) vaccine is about one in 1 million doses;<sup>189</sup> the risk of death from the vaccine in healthy people is virtually non-existent.<sup>190</sup> Getting the vaccine thus clearly reduced the risk of death. Even comparing the risk of severe allergic reaction from the vaccine to the rise of death from measles, it was still roughly 1,000 times less risky to get the vaccine than to walk around unvaccinated *even in just the year of vaccination*, let alone over a lifetime.

That calculus has changed. Even in a bad year, measles now causes only about 140,000 deaths globally,<sup>191</sup> reflecting a reduction in yearly measles deaths since 1963 of over 94 percent despite a world population that has more than doubled in the interim. Nevertheless, vaccination remains necessary to protect the public commons, especially given measles’ infection rate.

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<sup>186</sup> Benecke & DeYoung, *supra* note 176.

<sup>187</sup> *Measles*, WORLD HEALTH ORG., (Dec. 5, 2019), <https://www.who.int/news-room/fact-sheets/detail/measles> [<https://perma.cc/K9PF-VJMJ>].

<sup>188</sup> *World Population by Year*, WORLDOMETER, <https://www.worldometers.info/world-population/world-population-by-year/> [<https://perma.cc/D8A7-DTXA>] (last visited Jan. 23, 2021).

<sup>189</sup> Jeanne P. Spencer, Ruth H. Trondsen Pawlowski & Stephanie Thomas, *Vaccine Adverse Events: Separating Myth from Reality*, 95 AM. FAM. PHYSICIAN 786, 787 tbl. 1 (2017).

<sup>190</sup> *Measles Vaccination: Myths and Facts*, INFECTIOUS DISEASE SOC’Y OF AM., <https://www.idsociety.org/public-health/measles/myths-and-facts/> [<https://perma.cc/7LD2-DJAG>] (last visited June 10, 2022) (“There have been no deaths shown to be related to the vaccine in healthy people. There have been rare cases of deaths from vaccine side effects among children who are immune compromised, which is why it is recommended that they don’t get the vaccine . . . . There are possible side effects from the vaccine, including sore arm (from the shot), fever, mild rash, temporary pain/stiffness in the joints, and a very small risk of febrile seizures or allergic reaction.”).

<sup>191</sup> *Measles*, *supra* note 187.

Resistance to measles vaccines got a boost from the false linking of the MMR vaccine to autism, unfortunately given credence “by the 1998 publication of a series of articles in *The Lancet* by a former British doctor, Andrew Wakefield.”<sup>192</sup> “Despite the small sample size ( $n=12$ ), the uncontrolled design, and the speculative nature of the conclusions, the paper received wide publicity, and MMR vaccination rates began to drop because parents were concerned about the risk of autism after vaccination.”<sup>193</sup> Recent research indicates that the fraudulent research continues to influence parents’ decisions *not* to vaccinate their children, particularly as the internet and social media become increasingly popular sources of “medical” advice.<sup>194</sup>

Thus, the regulatory baselines for both pertussis and MMR vaccines have illegitimately shifted, allowing individuals to exaggerate the risk to themselves or their children from the vaccine while downplaying the continuing risks of the diseases.<sup>195</sup> At the same time, expanded exemptions from state vaccination mandates played a critical role in allowing individual choices to endanger public health once again.<sup>196</sup> Children (and others) are paying the price.

C. *The Vaccination Regulatory Shifting Baseline Syndrome Takes Legal Shape: Exemptions from State Vaccination Mandates*

1. *Increasing Numbers of State Exemptions from School Vaccination Requirements*

The NCVIA ensured that childhood vaccines remained available in the United States. Nevertheless, changes to state vaccination requirements

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<sup>192</sup> Benecke & DeYoung, *supra* note 176. The critical paper was Andrew J. Wakefield et al., *Ileal-Lymphoid-Nodular Hyperplasia, Non-Specific Colitis, and Pervasive Developmental Disorder in Children*, 351 LANCET 637, 637-41 (1998) (retracted by the journal for fraud in March 2010).

<sup>193</sup> T. S. Sathyanarayana Rao & Chittaranjan Andrade, *The MMR Vaccine and Autism: Sensation, Refutation, Retraction, and Fraud*, 53 INDIAN J. PSYCHIATRY 95, 95 (2011).

<sup>194</sup> Lucy E Elkin, Susan R.H. Pullon & Maria H. Stubbe, ‘Should I Vaccinate My Child?’ *Comparing the Displayed Stances of Vaccine Information Retrieved from Google, Facebook and YouTube*, 38 VACCINE 2772, 2771 (2020) (citations omitted); Benecke & DeYoung, *supra* note 176. For a particularly pointed internet response to anti-vaxxer rhetoric, see Rada Jones, *24 Reasons not to Vaccinate your Kid*, KEVINMD.COM (Jan. 25, 2020), <https://www.kevinmd.com/blog/2020/01/24-reasons-to-not-vaccinate-your-kid.html> [<https://perma.cc/F7WU-8DTF>].

<sup>195</sup> While this discussion focuses on measles, pertussis outbreaks are also common in the United States. As the CDC notes, “Pertussis (whooping cough) is a common (endemic) disease in the United States. There are peaks in reported cases of pertussis every few years and frequent outbreaks. In 2012, the largest peak in recent years, states reported 48,277 cases of pertussis.” *Pertussis Outbreaks*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/pertussis/outbreaks.html> [<https://perma.cc/BB2D-7KM7>] (last visited Nov 18, 2019).

<sup>196</sup> Benecke & DeYoung, *supra* note 176; Dickema, *supra* note 174, at 283-84.



increasingly allowed the vaccine hesitant and anti-vaxxers to pursue their personal inclinations, allowing diseases like measles to re-emerge.

Exemptions from state vaccination requirements have been part of the legal vaccination landscape almost from the beginning. For example, even in the nineteenth century, Massachusetts' vaccination laws allowed "an exception in favor of 'children who present a certificate, signed by a registered physician, that they are unfit subjects for vaccination.'"<sup>197</sup> Medical exemptions from vaccination continue to find support among public health officials because "[s]ome people have medical conditions that increase the risk for adverse effect, and therefore they should not receive vaccines. Recognizing this fact, all state vaccination laws provide for exemptions for persons with contraindicating conditions."<sup>198</sup> Utah's medical exemption is fairly typical. While Utah requires students to have a certificate of immunization to attend any "public, private, or parochial kindergarten, elementary, or secondary school through grade 12, nursery school, licensed day care center, child care facility, family care home, or head-start program,"<sup>199</sup> children can avoid this requirement if they have a physician's certification that a health condition prevents the child from receiving the vaccines.<sup>200</sup>

The two other exemptions that emerged in states over time—exemptions for religious reasons and exemptions based on personal philosophy—are far less well-grounded in medicine but instead seek to accommodate other, individual, values. The policy and legal issues they raise for contemporary society and the resurgence of diseases like measles are whether these personal exemptions should trump the greater public good. However, by the end of the twentieth century in the United States, they also represented the legal manifestation of the vaccination regulatory shifting baseline syndrome, undercutting the vaccination mandates that had allowed many formerly dread diseases to disappear from the average American's consciousness.<sup>201</sup>

## 2. *Personal Philosophical Exemptions from Vaccine Requirements*

Personal philosophical exemptions from vaccination requirements allow parents to avoid school vaccination requirements for their children based on personal or moral beliefs.<sup>202</sup> These exemptions originated in the British

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197 *Jacobson*, 197 U.S. at 12 (citing MASS. REV. L. chap. 75, § 139). Massachusetts added its medical exemption in 1894. Diekema, *supra* note 174, at 278.

198 Malone & Hinman, *supra* note 91, at 273.

199 UTAH CODE ANN. § 53A-11-301 (2020).

200 *Id.* § 53A-11-302.

201 *14 Diseases You Almost Forgot About (Thanks to Vaccines)*, *supra* note 15.

202 *States With Religious and Philosophical Exemptions From School Immunization*

Vaccination Act of 1898, which “provided a conscience clause to allow exemptions to mandatory smallpox vaccination. This clause gave rise to the term ‘conscientious objector,’ which later came to refer to those opposed to military service.”<sup>203</sup> Philosophical objections to mandatory vaccination can hark back to Jacobson’s objection to this basic infringement on liberty, arise from a fear of an adverse reaction to or contamination from the vaccines, or reflect the parents’ conclusions that their children really are not at risk of contracting particular diseases or that the diseases for which vaccinations are required are not that bad.<sup>204</sup>

States actively adopted philosophical exemptions between 1970, when only “five states allowed exemption from the law if a parent simply objected in writing,”<sup>205</sup> and 2014. At the beginning of the twenty-first century, fifteen states provided exemptions for personal philosophical objections—California, Colorado, Idaho, Louisiana, Maine, Michigan, Minnesota, New Mexico, North Dakota, Ohio, Oklahoma, Utah, Vermont, Washington, and Wisconsin.<sup>206</sup> By 2014, the number had risen to twenty-two, subtracting New Mexico but adding Arizona, Arkansas, Missouri (childcare facilities only), Oregon, Pennsylvania, Texas, Virginia (HPV vaccine only), and Wisconsin.<sup>207</sup> More importantly, *use* of these exemptions more than doubled,<sup>208</sup> indicating that ever more Americans considered the personal risks from vaccination to outweigh the risks of contracting the vaccine-preventable diseases.

States phrase these exemptions in a variety of ways. Harkening back to England, Texas allows the exemption if a parent cites “reasons of conscience.”<sup>209</sup> Arizona, in turn, requires that:

The parent or guardian of the pupil submits a signed statement to the school administrator stating that the parent or guardian has received information about immunizations provided by the

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*Requirements*, NAT’L CONF. STATE LEGISLATURES (May 25, 2022), <https://www.ncsl.org/research/health/school-immunization-exemption-state-laws.aspx> [https://perma.cc/C2HN-Y7SU].

<sup>203</sup> *Vaccination Exemptions*, HIST. OF VACCINES (updated Jan. 7, 2018), <https://historyofvaccines.org/getting-vaccinated/vaccine-faq/vaccination-exemptions> [https://perma.cc/2QT6-MGJQ].

<sup>204</sup> Malone & Hinman, *supra* note 91, at 273.

<sup>205</sup> Diekema, *supra* note 174, at 279.

<sup>206</sup> Malone & Hinman, *supra* note 91, at 273.

<sup>207</sup> This list combines information from *States With Religious and Philosophical Exemptions From School Immunization Requirements*, *supra* note 202, with the legislative developments cited therein. See also *Vaccination Exemptions*, *supra* note 203 (also counting twenty states before California’s and Vermont’s changes in 2015).

<sup>208</sup> *Vaccination Exemptions*, *supra* note 203.

<sup>209</sup> TEX. EDUC. CODE ANN. § 38.001.

department of health services and understands the risks and benefits of immunizations and the potential risks of nonimmunization and that due to personal beliefs, the parent or guardian does not consent to the immunization of the pupil.<sup>210</sup>

Despite their early twenty-first-century popularity, however, states can easily—at least as a matter of law—eliminate philosophical exemptions. As *Jacobson* and *Zucht* make clear, these exemptions exist purely as a matter of the state’s largesse, politically accommodating parents who prefer not to vaccinate their children, often resulting from unwarranted concerns about the vaccines.

### 3. *Religious Exemptions from Vaccine Requirements*

State exemptions from vaccine requirements for religious reasons are both more pervasive and potentially more legally and politically difficult to remove, given the Free Exercise Clause in the First Amendment to the U.S. Constitution.<sup>211</sup> The Christian Science Church was particularly active in lobbying for religious exemptions in the twentieth century, and by 1970 “most states allowed exemption from school vaccine requirements . . . if the parents could demonstrate that the vaccination would violate the teachings of a recognized religious organization to which they belonged . . . .”<sup>212</sup>

The U.S. Supreme Court has never squarely addressed whether the First Amendment—or, since 1993, the Religious Freedom Restoration Act<sup>213</sup>—requires a religious exemption from mandatory vaccination laws. Nevertheless, it has signaled just the opposite: when offered the opportunity, the Court has gone out of its way to suggest that vaccine mandates are insulated from claims of religious freedom. For example, its 1944 case of *Prince v. Massachusetts* addressed the issue of whether a Jehovah’s Witness could violate child labor laws on religious grounds.<sup>214</sup> Along the way to upholding Massachusetts’ conviction of the parent, the Court emphasized that:

neither rights of religion nor rights of parenthood are beyond limitation. Acting to guard the general interest in youth’s well being, the state as *parens patriae* may restrict the parent’s control by requiring school attendance, regulating or prohibiting the child’s labor, and in many other ways . . . . *Thus, he cannot*

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210 ARIZ. REV. STAT. ANN. § 15-873(A)(1).

211 U.S. CONST., amend. I.

212 Diekema, *supra* note 174, at 279.

213 42 U.S.C. § 2000bb et seq.

214 321 U.S. 158, 159-60 (1944).

*claim freedom from compulsory vaccination for the child more than for himself on religious grounds. The right to practice religion freely does not include liberty to expose the community or the child to communicable disease or the latter to ill health or death.*<sup>215</sup>

Seventy years later, in 2014, a very different Court displayed the same reluctance to subject vaccination mandates (or, more technically, requirements that medical insurance cover the vaccinations) to the vagaries of individual religious beliefs. In *Burwell v. Hobby Lobby Stores, Inc.*, the Court determined that federal mandates in the Affordable Care Act requiring that employers provide health insurance that covers contraception, to which the employers involved objected on religious grounds, violate the Religious Freedom Restoration Act.<sup>216</sup> While the case had nothing directly to do with vaccination, along the way to its decision (prompted by the Department of Health and Human Services), the Court majority made clear that its decision did not necessarily extend to vaccines:

Our decision should not be understood to hold that an insurance-coverage mandate must necessarily fall if it conflicts with an employer's religious beliefs. *Other coverage requirements, such as immunizations, may be supported by different interests (for example, the need to combat the spread of infectious diseases) and may involve different arguments about the least restrictive means of providing them.*<sup>217</sup>

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215 *Id.* at 166-67 (citations omitted; emphasis added). Indeed, even in 1972 in one of the most important cases upholding religious freedom against state schooling requirements, the Supreme Court still emphasized that the case was “not one in which any harm to the physical or mental health of the child or to the public safety, peace, order, or welfare has been demonstrated or may be properly inferred,” again insulating the decision from directly intruding into public health mandates. *Wisconsin v. Yoder*, 406 U.S. 205, 230 (1972). Moreover, the U.S. Courts of Appeals recently have nearly uniformly upheld vaccine mandates against religious freedom claims. *See, e.g.,* *Fallon v. Mercy Cath. Med. Ctr. of Se. Pa.*, 877 F.3d 487, 492-93 (3d Cir. 2017) (holding that a hospital worker's refusal to comply with a flu vaccination requirement did not give rise to a religious discrimination claim and noting that “that we are not the only court to come to the conclusion that certain anti-vaccination beliefs are not religious”); *Phillips v. City of New York*, 775 F.3d 538, 542-44 (2d Cir. 2015) (upholding New York's application of its religious exemption against challenges from parents seeking exemptions on non-religious grounds); *Caviezel v. Great Neck Pub. Sch.*, 500 Fed. Appx. 16, 18-19 (2d Cir. 2012) (upholding a New York denial of a religious exemption); *Workman v. Mingo Co. Bd. of Educ.*, 419 Fed. Appx. 348, 354-56 (4th Cir. 2011) (upholding West Virginia's lack of a religious exemption).

216 573 U.S. 682, 736 (2014).

217 *Hobby Lobby*, 573 U.S. at 733 (emphasis added). In addition, as the Court explained at length, the application of the Religious Freedom Restoration Act to *state* mandates created a

Even the Supreme Court's most recent coronavirus-related religious freedom case, *Roman Catholic Diocese of Brooklyn v. Cuomo*,<sup>218</sup> does not necessarily subject vaccination requirements to constitutional or statutory claims of religious freedom. The case upheld a religious freedom First Amendment challenge to the New York Governor's executive order limiting religious services in "red" and "orange" zones to ten and twenty-five attendees, respectively.<sup>219</sup> The Court emphasized that the executive order imposed no such crowding limitations on "essential" businesses like liquor and hardware stores, nor did it tailor attendance limitations to the size of the church or synagogue,<sup>220</sup> constitutionally suspect differentiations that a vaccination mandate is unlikely to make. In addition, Justices Breyer, Sotomayor, and Kagan dissented on the merits regardless,<sup>221</sup> and both Justices Gorsuch and Kavanaugh, who voted in the majority, wrote concurring opinions that suggest that they might see a vaccination case differently. Justice Gorsuch explicitly suggested that the vaccine requirement in *Jacobson* might survive strict scrutiny,<sup>222</sup> while Justice Kavanaugh emphasized the "substantial deference" owed to state policy choices during pandemics.<sup>223</sup>

In the few cases that exist, state supreme courts explicitly ruled against religious freedom claims and upheld vaccine mandates.<sup>224</sup> Indeed, in 1979 the Mississippi Supreme Court went so far as to strike down the legislature's attempted religious exemption on grounds that it violated the Fourteenth Amendment's Equal Protection Clause.<sup>225</sup> Tipping its hand, it first asked, "Is it mandated by the First Amendment to the United States Constitution that innocent children, too young to decide for themselves, are to be denied the protection against crippling and death that immunization provides because of a religious belief adhered to by a parent or parents?"<sup>226</sup> The specter of children suffering "the horrors of crippling and death resulting from poliomyelitis or smallpox or from one of the other diseases against which means of immunization are known and have long been practiced successfully" haunts the rest of the opinion.<sup>227</sup>

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separate set of constitutional issues, leading to the Court invalidating Congress's original attempt to do so pursuant to the Fourteenth Amendment. *Id.* at 693-96 (explaining *City of Boerne v. Flores*, 521 U.S. 507 (1997)).

218 114 S. Ct. 63 (2020).

219 *Id.* at 66.

220 *Id.* at 66-67.

221 *Id.* at 76-78 (Breyer, J., dissenting). Chief Justice Roberts dissented on grounds of mootness. *Id.* at 75-76 (Roberts, C.J., dissenting).

222 *Id.* at 71 (Gorsuch, J., concurring).

223 *Id.* at 73-74 (Kavanaugh, J., concurring).

224 E.g., *Wright v. DeWitt Sch. Dist.*, 385 S.W.2d 644, 648 (Ark. 1965).

225 *Brown v. Stone*, 378 So. 2d 218, 233 (Miss. 1979).

226 *Id.* at 221.

227 *Id.* at 222-23. See also *Dalli v. Bd. of Ed.*, 267 N.E.2d 219, 223 (Mass. 1971) (striking

Nevertheless, despite the apparent lack of constitutional or statutory requirements, the vast majority of states avoided Mississippi's haunting. By the beginning of the twenty-first century, forty-eight states—all but Mississippi and West Virginia—allowed exemptions from mandatory school vaccination requirements on religious grounds.<sup>228</sup>

#### 4. *Correlations Between Exemptions and Reduced Vaccination Rates*

The non-medical exemptions from state school vaccination requirements allowed the vaccine hesitant and anti-vaxxers considerable latitude to exercise their individual choices—with consequences to public health. To be sure, into the twenty-first century nationwide vaccination rates remained high.<sup>229</sup> Nevertheless, of the seven states where more than 1 percent of students used exemptions in the 1997-1998 school year, four—Colorado, Michigan, Utah, and Washington—had philosophical exemptions.<sup>230</sup> Moreover, pockets of non-vaccination began to emerge at the community scale, and “in some communities, the levels of exemptors may be as high as 5%. In 1995, 84% of California schools had fewer than 1% of students with exemptions, but 4% of schools had 5% or more with exemptions”<sup>231</sup>—meaning that student vaccination rates in those schools were approaching the rate (95 percent) that signals the loss of herd immunity for measles. The State of Washington, which allows all three kinds of exemptions, had an overall “exemption rate of 5.2% in the 2014-15 school year.”<sup>232</sup> Overall, between the 2011-2012 school year and the 2017-2018 school year, use of non-medical exemptions for school vaccination requirements continued to increase, with some states seeing the vaccination rates for kindergartners entering school in Fall 2017 as low as 81.3 percent.<sup>233</sup>

Starting in the late 1980s, exemptions from vaccination also increasingly correlated to increased risk of measles, particularly in religious communities such as the Amish.

Salmon et al. found that persons with documented religious or philosophic exemptions were 35 times more likely to contract measles than were vaccinated persons during 1985-1992. *They*

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down Massachusetts' religious exemption on Equal Protection grounds because it favored some religions over others).

228 Malone & Hinman, *supra* note 91, at 273.

229 *Id.* at 274 (citation omitted).

230 *Id.*

231 *Id.* (citation omitted).

232 *Vaccination Exemptions*, *supra* note 203.

233 Robert A. Bednarczyk et al., *Current Landscape of Nonmedical Vaccination Exemptions in the United States: Impact of Policy Changes*, 18 EXPERT REV. VACCINES 175, 178 (2019).

*also found that persons living in communities with high concentrations of exemptors were themselves at increased risk for measles because of increased risk for exposure.*<sup>234</sup>

Thus, individual choices to seek exemptions from state vaccination mandates quickly began to impact both community health and the exemptors themselves. It also became clear that legal design was an important factor in individuals' decisions to exploit an exemption: states with complicated processes for obtaining their religious and philosophical exemptions maintained high rates (over 99 percent) of student vaccination, while one-third of the states with simple procedures had their exemption rates exceed 1 percent of students.<sup>235</sup>

Exemptions from school vaccination mandates and the increasing willingness of parents to use them thus undercut—especially for measles—the herd immunity that seemed well established by the turn of the twenty-first century. In the terms of this Article, the problem—vaccine-preventable diseases—will re-emerge if vaccination programs do not remain robust, as the measles outbreaks in 2015 and 2019 amply demonstrated.

Increasing rejection of childhood vaccinations before COVID-19 arose, particularly for measles, thus represents an illegitimate shift in risk perception and hence an example of the regulatory shifting baseline *syndrome*. This syndrome manifests in personal decisions not to vaccinate based on incorrect or exaggerated perceptions of risk from the vaccines themselves, often coupled with assertions of individual liberty or religious rights. However, this shift in risk perception and personal unwillingness to participate in vaccination programs has been possible on a large scale only because of the very success of twentieth-century vaccination programs and requirements—that is, because at least two generations of Americans had the luxury of forgetting what it is like to live with the constant threat of contracting and dying from last century's dread diseases. However, as a result of that generational amnesia, the diseases in question—especially measles—are starting to return.

#### IV. VACCINES AND THE REGULATORY SHIFTING BASELINE SYNDROME IN A COVID-19 WORLD

##### A. COVID-19 and Traditional Vaccine-Preventable Diseases

Although not as intuitively obvious as air or water, public health is a commons resource,<sup>236</sup> where the well-being of society as a whole depends

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<sup>234</sup> *Id.* (citations omitted; emphasis added).

<sup>235</sup> *Id.*

<sup>236</sup> Malone & Hinman, *supra* note 91, at 263 (2007) (citing Hardin, *supra* note 68, at 1243-

upon—and can be destroyed by—the cumulative effects of individual choices. For the first time in many decades, all Americans have been experiencing this reality firsthand in the COVID-19 pandemic. That experience should have revived cultural memories about the importance of vaccines and vaccination mandates in reducing the risks of dying from dread diseases. Instead, hyperpoliticization regarding the risks of both COVID-19 and its vaccines during the Trump Administration and the perceived infringements on personal liberty have led significant segments of the U.S. population to reject masks, social distancing, and vaccines,<sup>237</sup> brightly illuminating the public-private interplay inherent in promoting public health.

Resistance to COVID-19 vaccines is obviously *not* a case of generational amnesia or the vaccination regulatory shifting baseline syndrome. Nevertheless, the traditional vaccine-preventable diseases and the threat posed by the pre-COVID-19 vaccination shifting baseline syndrome have not disappeared during the pandemic, a fact that the controversies over COVID-19 have fairly effectively obscured.

But those threats remain, and COVID-19 may have exacerbated them globally—making it all the more important to resist exacerbating vulnerability to the traditional vaccine-preventable diseases through the regulatory shifting baseline syndrome. At the start of the pandemic, the World Health Organization (WHO) issued guidelines aimed primarily at resource-strapped countries. These guidelines added a new risk-risk calculus to vaccination programs, recommending that

governments temporarily pause preventive immunization campaigns where there is no active outbreak of a vaccine-preventable disease . . . . The recommendations also ask governments to undertake a careful risk-benefit analysis when deciding whether to delay vaccination campaigns in response to outbreaks, with the possibility of postponement where risks of COVID-19 transmission are deemed unacceptably high.<sup>238</sup>

Governments followed these recommendations, and in November 2021, WHO and the U.S. CDC reported that “[t]he risk of outbreaks of measles across the world is mounting because the covid-19 pandemic caused millions of

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48); see also Hardin, *supra* note 68 (defining a commons resource).

237 Wolfgang Stroebe et al., *Politicization of COVID-19 Health-Protective Behaviors in the United States: Longitudinal and Cross-National Evidence*, 17 PLOS ONE 1, 3-4 (Oct. 2021); Bolsen & Palm, *supra* note 11.

238 *COVID-19’s Impact on Measles Vaccination Coverage*, CTRS. FOR DISEASE CONTROL & PREVENTION (updated Nov. 11, 2020), <https://www.cdc.gov/globalhealth/measles/news/covid-impact-on-measles-vaccination.html> [<https://perma.cc/7TSD-G9EP>].



children to miss out on essential vaccinations and has severely affected disease surveillance systems . . . .”<sup>239</sup> Across the globe, “[i]n 2020 around 22.3 million children missed their first dose of the measles vaccine, three million more than in 2019 and representing the largest increase in the number of unvaccinated children since 2000, at the height of unfounded safety concerns over the measles, mumps, and rubella vaccine . . . .”<sup>240</sup> Thus, globally, resurgences of these vaccine-preventable diseases may be on the horizon. From the point of view of combatting the pandemic, this advice may have been a misstep, because new research indicates that receiving other vaccines, including the flu vaccine, helps the vaccinated person to resist COVID-19.<sup>241</sup>

However, in light of resuming international travel, the potential for measles outbreaks elsewhere only underscores the need to resist the vaccination regulatory shifting baseline in the United States and to keep school vaccination mandates strong. While the public health measures established to slow the spread of COVID-19 also worked to prevent the spread of measles during the pandemic, public health officials fear increased outbreaks as the pandemic restrictions ease.<sup>242</sup> Pakistan, for example, has been experiencing an “unprecedented rise in measles outbreaks across the country” in 2021.<sup>243</sup> As a good first step, the United States avoided the global trend of reduced childhood immunizations, with first-dose coverage increasing slightly from 90.4 percent in 2019 to 90.7 percent in 2020<sup>244</sup>—although this vaccination rate is still below the 95 percent rate needed for full herd immunity to measles.

As the United States faces this intensified potential threat of measles resurgence and the transportation of measles and other vaccine-preventable diseases into its territory, two sets of potentially opposing legal responses to disease threats are occurring simultaneously. One set, which began to take shape before the COVID-19 pandemic, provides regulatory correctives to the vaccination regulatory shifting baseline syndrome for traditional diseases like measles. However, the other set consists of the judicial responses to COVID-19 mandates, which may end up undermining vaccination mandates more generally.

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239 Ingrid Torjesen, *Measles Outbreaks Likely as Covid Pandemic Leaves Millions of World’s Children Unvaccinated*, *WHO Warns*, *BMJ* (Nov. 11, 2021), <https://www.bmj.com/content/375/bmj.n2755> [<https://perma.cc/Z9E4-FCEP>].

240 *Id.*

241 Nathaniel Hupert et al., *Heterologous Vaccination Interventions to Reduce Pandemic Morbidity and Mortality: Modeling the US Winter 2020 COVID-19 Wave*, 119 *PROC. NAT’L ACAD. SCI. (PNAS)* 1, 1 (2022).

242 Torjesen, *supra* note 239.

243 Muhammad Suleman Rana et al., *Emergence of Measles During the COVID-19 Pandemic Threatens Pakistan’s Children and the Wider Region*, 27 *NATURE MED.* 1127, 1127 (2021).

244 Torjesen, *supra* note 239.

*B. Response #1: Reactions to the Resurgence of Measles*

Incidents like the *Lancet* fraud and the low vaccination rates in some states in 2017 illuminate how far the public's risk perception baseline has shifted from the vaccine-preventable diseases to the vaccines themselves, warranting restoration of regulatory regimes' full strength. Fortunately, resurgences of diseases thought long vanquished, like measles, have inspired governments to strengthen their vaccine programs and requirements once again, suggesting that disease resurgence is reactivating cultural memory and partially correcting this regulatory shifting baseline syndrome—at least for the traditional diseases.

*1. The Federal Government's Response to Measles Resurgence*

Although vaccination levels in schoolchildren during the 1980s were 90 percent or higher as a result of the new school vaccination requirements, rates among preschool children were significantly lower,<sup>245</sup> correlating with the increasing availability of exemptions from school vaccination mandates. The result was a measles resurgence in 1989-1991, "primarily affecting unvaccinated preschool-aged children,"<sup>246</sup> which resulted in 55,000 reported cases. In response, Congress created the Vaccines for Children Program<sup>247</sup> through the Omnibus Budget Reconciliation Act of 1993.<sup>248</sup> The program originally lasted two decades, between 1994 and 2013. Under it, "all Medicaid-eligible children, all children who are uninsured, all American Indian and Alaska Native children, and insured children whose coverage does not include vaccinations (with limitations on the locations where this last group can receive VFC vaccine) qualify to receive routine childhood vaccines at no cost for the vaccine."<sup>249</sup>

In 2014, the CDC analyzed this program and concluded that it was a rousing success.<sup>250</sup> Thus, the Vaccines for Children Program indicates that stepped-up federal financing of vaccination can be one effective corrective to the vaccination regulatory shifting baseline syndrome. Notably, however, once vaccine rates increased, the government stoppoeed providing free vaccines, helping to set the stage for another measles resurgence and perhaps reflecting a small instance of the vaccination regulatory shifting baseline syndrome.

<sup>245</sup> Malone & Hinman, *supra* note 91, at 270.

<sup>246</sup> *Id.*

<sup>247</sup> Cynthia G. Whitney et al., *Benefits from Immunization During the Vaccines for Children Program Era—United States, 1994–2013*, CTRS. FOR DISEASE CONTROL & PREVENTION MORBIDITY & MORTALITY WEEKLY REP. (Apr. 25, 2014), <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6316a4.htm> [<https://perma.cc/HQ2F-R2N8>].

<sup>248</sup> Pub. L. No. 103–66, § 13631, 107 Stat. 312 (Aug. 10, 1993), *codified at* 42 U.S.C. § 1396v.

<sup>249</sup> Malone & Hinman, *supra* note 91, at 268.

<sup>250</sup> Whitney et al., *supra* note 247.

## 2. *The States' Responses to Measles Resurgence*

Resurgences of diseases like measles have also led some states to re-think their exemptions from school vaccination requirements. In response to the 2014-2015 measles outbreak, for example, several states revisited their vaccination laws. In 2015, “Vermont became the first state to repeal its personal belief exemption,” followed by California, which “removed exemptions based on personal beliefs, which are defined in that state as also including religious objections.”<sup>251</sup> Other states made it more difficult to claim an exemption from the vaccine requirements—a procedural modification that, as noted above, has been correlated with significantly lower rates of exemption use. For example, Connecticut “require[d] an annual, notarized, statement from parents or guardians specifying religious objection to required vaccinations.”<sup>252</sup> At the same time, West Virginia amended its vaccine legislation to “require[] certification by a licensed physician for medical exemption requests,” and Illinois “require[d] parents or guardians who claim a religious exemption to detail their objections for specific immunizations, obtain a health care provider’s signature, and submit an exemption certificate for each child before kindergarten, sixth and ninth grade.”<sup>253</sup>

State amendments to vaccine exemptions have continued. In 2016, both Michigan and Delaware revisited their school vaccine mandates, and Delaware weakened its religious exemption.<sup>254</sup> In 2017, Utah potentially eviscerated parental control by allowing minors to consent to their own vaccinations.<sup>255</sup>

The 2019 measles outbreak again inspired states to strengthen their vaccine requirements, especially New York. As noted above, measles cases in 2019 occurred in thirty-one states, but “75% of cases were linked to outbreaks in New York City and New York state, most of which were among unvaccinated children in Orthodox Jewish communities.”<sup>256</sup> In response to these measles outbreaks, New York ended its religious exemption and other exemptions from school

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251 *States With Religious and Philosophical Exemptions From School Immunization Requirements*, *supra* note 202 and legal developments cited therein. *See also Vaccination Exemptions*, *supra* note 203 (noting Vermont’s and California’s 2015 laws eliminating all non-medical exemptions).

252 *States With Religious and Philosophical Exemptions From School Immunization Requirements*, *supra* note 202.

253 *Id.*

254 *Id.*

255 *Id.*

256 News Staff, *In Wake of Measles Outbreaks, CDC Updates 2019 Case Totals*, AAFP (Oct. 9, 2019), <https://www.aafp.org/news/health-of-the-public/20191009measlesupdt.html> [https://perma.cc/PG5L-MFT6].

vaccine requirements.<sup>257</sup>

State legislatures in Arkansas, Maine, Washington, Colorado, and Virginia also responded to the 2019 measles outbreaks. In fairly targeted legislation, Washington removed “the personal belief exemption for the measles, mumps and rubella vaccine requirement for public schools, private schools and day care centers.”<sup>258</sup> Maine, in contrast, eliminated both its religious and personal belief exemptions,<sup>259</sup> although these changes did not take effect until September 2021.<sup>260</sup> As of 2019, Arkansas required public and private schools to maintain records regarding vaccination exemption use; in 2020, Colorado established similar requirements and required parents claiming a personal or religious exemption to complete an online education program first.<sup>261</sup> In 2020, Virginia required its school vaccination requirements to “be consistent with the Immunization Schedule developed and published by the Centers for Disease Control and Prevention, the Advisory Committee on Immunization Practices, the American Academy of Pediatrics, and the American Academy of Family Physicians.”<sup>262</sup> In 2021, Connecticut removed its religious exemption entirely, becoming the sixth state to remove all non-medical exemptions from school vaccination requirements.<sup>263</sup>

Thus, over the course of seven years, state legislatures significantly shifted the vaccine regulatory baseline back toward public protection. By January 2021, the number of states with a personal philosophy exemption dropped back to fifteen.<sup>264</sup> A record six states now have no non-medical exemptions, while several others have made use of their exemptions more difficult, including through education requirements.<sup>265</sup> The cultural memory that school vaccination requirements curb personal impulses that put the public health at risk appears to be, for the moment, at least partially re-activated.

### C. Response #2: The Politicization of the Coronavirus Pandemic and the

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257 Bobby Allyn, *New York Ends Religious Exemptions for Required Vaccines*, NPR (June 13, 2019), <https://www.npr.org/2019/06/13/732501865/new-york-advances-bill-ending-religious-exemptions-for-vaccines-amid-health-cris> [<https://perma.cc/5G7X-7TBA>].

258 *States With Religious and Philosophical Exemptions From School Immunization Requirements*, *supra* note 202.

259 *Id.*

260 *State Vaccination Exemptions for Children Entering Public Schools*, BRITANNICA PROCON.ORG (updated Mar. 4, 2020), <https://vaccines.procon.org/state-vaccination-exemptions-for-children-entering-public-schools/> [<https://perma.cc/3LKS-A5XG>].

261 *Id.*; *States With Religious and Philosophical Exemptions From School Immunization Requirements*, *supra* note 202 (providing the same information).

262 *State Vaccination Exemptions for Children Entering Public Schools*, *supra* note 260.

263 *Id.*

264 *Id.*

265 *Id.*

*Future of Vaccination Mandates*

While the state's legal responses to resurgences of traditional vaccine-preventable diseases—strengthening their school vaccination mandates—are positive steps toward countering the vaccination regulatory shifting baseline syndrome in the United States, law deriving from pandemic-based litigation is more worrisome. In particular, the U.S. Supreme Court's responses to challenges to COVID-19 vaccination mandates suggest that the legalities of vaccination mandates going forward may be more complex than in the past.

Before COVID-19 locked down the United States in March 2020, the last true pandemic in this country was the 1918 H1N1 flu (“Spanish flu”) pandemic—although the 2009 H1N1 flu (“swine flu”) outbreak did considerable damage.<sup>266</sup> In the thirteen months between January 21, 2020, and February 20, 2021, the coronavirus pandemic killed over 495,000 people in the United States and over 2.45 million worldwide<sup>267</sup>—levels approaching pre-vaccine death rates from measles. By February 2021, mass vaccination against the new disease was in its early stages, even as public health workers were discovering more virulent mutations of the virus.<sup>268</sup>

Politicization of the pandemic and resistance to vaccination, much of it growing from skepticism that the FDA had properly vetted the COVID-19 vaccines, means that vaccination rates remain too low to achieve herd immunity,<sup>269</sup> even in the absence of new variants. One response has been federal vaccination mandates, which have in turn inspired new litigation.

The U.S. Supreme Court issued two COVID-19 vaccination mandate decisions on January 13, 2022, upholding one federal vaccination mandate and overturning the other. In *Biden v. Missouri*, a narrow (5-4) majority of Justices lifted lower court injunctions against the Secretary of Health and Human Services' vaccination mandate for health care professionals, upholding the

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266 *Worst Outbreaks in U.S. History*, HEALTHLINE, <https://www.healthline.com/health/worst-disease-outbreaks-history> [<https://perma.cc/FW6Y-W7AN>] (last visited Jan. 27, 2021). “The CDC estimates that there were 60.8 million cases, 274,304 hospitalizations, and 12,469 deaths in the United States” from the 2009 flu outbreak. *Id.*

267 *United States COVID-19 Cases and Deaths by State*, CTRS. FOR DISEASE CONTROL & PREVENTION (updated Jan. 26, 2021), [https://covid.cdc.gov/covid-data-tracker/#cases\\_totaldeaths](https://covid.cdc.gov/covid-data-tracker/#cases_totaldeaths) [<https://perma.cc/M86J-R5VQ>]. The exact count as of January 26, 2021, was 419,827 deaths, reflecting 1,891 new deaths from the previous day. *Id.*

268 *COVID-19: Emerging SARS-CoV-2 Variants*, CTRS. FOR DISEASE CONTROL & PREVENTION (updated Jan. 28, 2021), <https://www.cdc.gov/coronavirus/2019-ncov/more/science-and-research/scientific-brief-emerging-variants.html> [<https://perma.cc/ZKK2-B5S3>].

269 Giovanni Russonello, *The Rising Politicization of Covid Vaccines*, N.Y. TIMES (updated Apr. 30, 2021), <https://www.nytimes.com/2021/04/06/us/politics/covid-vaccine-skepticism.html> [<https://perma.cc/48EN-8JTL>].

agency's authority to impose such mandates.<sup>270</sup> "In November 2021, the Secretary announced that, in order to receive Medicare and Medicaid funding, participating facilities must ensure that their staff—unless exempt for medical or religious reasons—are vaccinated against COVID-19."<sup>271</sup> The Secretary issued the rule after finding that "35% or more of staff remain unvaccinated" and that those staff "pose a serious threat to the health and safety of patients. That determination was based on data showing that the COVID-19 virus can spread rapidly among healthcare workers and from them to patients, and that such spread is more likely when healthcare workers are unvaccinated."<sup>272</sup> Noting that "COVID-19 is a highly contagious, dangerous, and—especially for Medicare and Medicaid patients—deadly disease" and that "[t]he Secretary of Health and Human Services determined that a COVID-19 vaccine mandate will substantially reduce the likelihood that healthcare workers will contract the virus and transmit it to their patients," the Court majority had no trouble concluding that the vaccination mandate fit within the Secretary's statutory authority "to impose conditions on the receipt of Medicaid and Medicare funds that 'the Secretary finds necessary in the interest of the health and safety of individuals who are furnished services.'"<sup>273</sup> Moreover, "[v]accination requirements are a common feature of the provision of healthcare in America: Healthcare workers around the country are ordinarily required to be vaccinated for diseases such as hepatitis B, influenza, and measles, mumps, and rubella."<sup>274</sup> The majority concluded, "The challenges posed by a global pandemic do not allow a federal agency to exercise power that Congress has not conferred upon it. At the same time, such unprecedented circumstances provide no grounds for limiting the exercise of authorities the agency has long been recognized to have."<sup>275</sup>

In contrast, in *National Federation of Independent Businesses v. Secretary of Labor, Occupational Safety & Health Administration*, a 6-3 majority of the Court stayed the Occupational Safety and Health Administration's (OSHA's) emergency temporary standard (ETS) mandating that employers with more than 100 employees require employees to be vaccinated against COVID-19 or take weekly COVID-19 tests at their own expense and wear a mask in the workplace.<sup>276</sup> The majority concluded that the Occupational Safety and Health Act did not authorize any such regulation because "[t]he Act empowers the

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270 *Biden v. Missouri*, 142 S. Ct. 647, 650 (2022) (*per curiam*).

271 *Id.* (citing 86 Fed. Reg. 61555 (2021)).

272 *Id.* at 651 (citing 56 Fed. Reg. at 61559).

273 *Id.* at 652 (quoting 42 U. S. C. § 1395x(e)(9)).

274 *Id.* at 653.

275 *Id.* at 654.

276 *Nat'l Fed. of Indep. Bus. v. Dep't of Lab., Occupational Safety & Health Admin.*, 142 S. Ct. 661, 662 (2022) (*per curiam*).

Secretary to set workplace safety standards, not broad public health measures.”<sup>277</sup>

Both of these decisions most obviously turn on administrative law questions regarding the scope of federal agency regulatory authority under particular statutes. As such, the fact that the Court reached opposite conclusions regarding the propriety of vaccination mandates within two different regulatory regime need not necessarily raise alarm bells. However, within these differing administrative law contexts, *both* cases acknowledged the rights of individuals *not* to get vaccinated, regardless of what low vaccination rates might do to public health. For example, the majority in *National Federation of Independent Businesses* emphasized that OSHA’s standard “ordered 84 million Americans to either obtain a COVID–19 vaccine or undergo weekly medical testing at their own expense. This is no ‘everyday exercise of federal power.’ . . . It is instead a significant encroachment into the lives—and health—of a vast number of employees.”<sup>278</sup>

While the rights of individuals not to become vaccinated was necessarily more attenuated in *Biden v. Missouri*, Justice Thomas clearly raised the issue in dissent, while the majority emphasized the special positionality of the medical profession vis-à-vis the pandemic. For example, the majority involved “the fundamental principle of the medical profession: first, do no harm” to help to justify the necessity of a vaccination mandate: “COVID–19 is a highly contagious, dangerous, and—especially for Medicare and Medicaid patients—deadly disease. The Secretary of Health and Human Services determined that a COVID–19 vaccine mandate will substantially reduce the likelihood that healthcare workers will contract the virus and transmit it to their patients.”<sup>279</sup> Thus, this healthcare-centered justification based on the special obligations of the medical profession could, perversely, undermine support for more general vaccination mandates. Indeed, Justice Thomas’s dissent did not find even this medical context sufficient to override the the individual rights of medical workers, emphasizing that “[c]overed employers must fire noncompliant workers or risk fines and termination of their Medicare and Medicaid provider agreements. As a result, the Government has effectively mandated vaccination for 10 million healthcare workers.”<sup>280</sup> This “omnibus rule,” Justice Thomas noted, “compels millions of healthcare workers to undergo an unwanted medical procedure that ‘cannot be removed at the end of the shift’ . . . .”<sup>281</sup>

Moreover, both the *National Federation of Independent Businesses* majority

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<sup>277</sup> *Id.* at 665 (citing 29 U.S.C. §§ 655(b), 655(c)(1)).

<sup>278</sup> *Id.* (citation omitted).

<sup>279</sup> *Biden v. Missouri*, 142 S. Ct. at 652.

<sup>280</sup> *Biden v. Missouri*, 142 S. Ct. at 655 (Thomas, J., dissenting).

<sup>281</sup> *Id.* at 656 (Thomas, J., dissenting) (citation omitted).

and the dissents in *Biden v. Missouri* undermine the normal flexibility accorded governments during emergencies, and are more attuned to protecting individual liberties than protecting the public health commons. More importantly for the long term, and at both the federal and state levels, they hint at potential Due Process limitations, both procedural and substantive, on vaccination mandates that could have broad applicability if ever clearly recognized. Thus, even as states are reinvigorating their school vaccination mandates for both the traditional vaccine-preventable diseases and, in some cases, COVID-19—"California and the District of Columbia will require children to receive an FDA-approved COVID-19 vaccine for school entry in 2022"<sup>282</sup>—judges and Justices appear to be beginning to question the general legitimacy of vaccination mandates.

*D. Can Awareness of the Regulatory Shifting Baseline Syndrome Help?*

It is understandably easy for all decisionmakers, from parents to Supreme Court Justices, to forget about other diseases during a deadly pandemic. Given this reality, the fact that childhood vaccination rates actually increased slightly in the United States in 2020 may be a positive sign that the pandemic revitalized a more general cultural memory regarding the value of vaccines and the true risk-risk analysis they embody.

Nevertheless, the COVID-19 pandemic has also given the vaccine-resistant members of the U.S. population multiple opportunities, from social media to courtrooms, to demand control over their own bodies. The perverse result may be that the immediacy of the coronavirus pandemic and its public health and legal challenges—and particularly given the politicization of COVID-19 vaccination in the United States—may further obscure the workings of the vaccination regulatory shifting baseline syndrome with respect to other diseases. One must wonder: if push comes to shove, will there be another Mississippi Supreme Court to voice an Equal Protection rebuttal to an assertion of individual rights, acknowledging "the horrors of crippling and death . . . from . . . the diseases against which means of immunization are known and have long been practiced successfully"?

Vaccination mandates require a communitarian perspective on the functions of law and government because herd immunity requires that most individual choices give way to the community's needs as a whole. Were the result as simple as leaving those who refuse to get vaccinated to take on the risks of dying from the disease, vaccination mandates would be a far easier legal issue. However, an individual's refusal to get vaccinated imposes costs on others—on the individuals who need herd immunity to be protected because they *cannot* be vaccinated, on

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282 *States With Religious and Philosophical Exemptions From School Immunization Requirements*, *supra* note 202.



the individuals whose *other* healthcare needs cannot be properly attended to during an outbreak, and—as the pandemic has made clear—potentially on the healthcare system itself. Assertions of individual rights *not* to vaccinate, in other words, impose externalities on the public health commons. And the resulting disease outbreaks are the kind of collective tragedy of the commons that has long been acknowledged as a legitimate reason to regulate individual behavior.<sup>283</sup>

Notably, healthcare workers are colloquially aware of the vaccination regulatory shifting baseline syndrome, which they often summarize as vaccines being a victim of their own success.<sup>284</sup> For example, in 2019, before the pandemic, Dr. Seth Berkley, chief executive of the GAVI global vaccine alliance, told an international audience that the vaccination challenge has changed from achieving the maximum level of vaccination coverage to getting parents to have their children vaccinated at all, and “that this trend was, ironically, caused by the fact that vaccines have eradicated the most lethal diseases.”<sup>285</sup> To circle back to Daniel Pauly, what is needed is a way to operationalize these anecdotal observations and to make the fact of generational amnesia regarding vaccine-preventable diseases legally cognizable.

Awareness of the regulatory shifting baseline syndrome prompts revitalization of our cultural memories of the original drivers of vaccination mandates—high risks of dying from or being disfigured by the early twentieth century’s dread diseases (minus smallpox and polio). It reminds decisionmakers why vaccine manufacturers once were—and arguably still should be—broadly protected under state tort law<sup>286</sup> and why Congress enacted the NCVIA.

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283 Hardin, *supra* note 68, at 1243-46. Notably, Elinor Ostrom and others have done considerable work to show that other solutions are possible to commons management, challenging the inevitability of Hardin’s tragedy. *See generally, e.g.*, ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTIONS OF INSTITUTIONS FOR COLLECTIVE ACTION (1990). However, public health on a global or even national scale, particularly when mediated by vaccines, is unlikely to be amenable to other governance approaches given the high percentage of individuals who must participate.

284 Matthew Janko, *Vaccination: A Victim of Its Own Success*, 14 VIRTUAL MENTOR 3, 3-4 (2012); Gerardo Fortuna, *Vaccines Are Victim of Their Own Success, Global Health Expert Says*, EURACTIV (updated July 2, 2019), <https://www.euractiv.com/section/health-consumers/interview/vaccines-are-victim-of-their-own-success-global-health-expert-says/> [<https://perma.cc/VHE5-EZK5>]; Adriana Belmonte, ‘A Victim of Their Own Success’: How Vaccines Became A Casualty of Misinformation in the U.S., YAHOO! FINANCE (Oct. 19, 2019), <https://finance.yahoo.com/news/vaccines-anti-vax-debate-135125026.html> [<https://perma.cc/UP2F-CHFG>]; Amy Prideaux, *Vaccines—A Victim of Their Own Success*, MEDICS ACAD. (Apr. 1, 2021), <https://blog.medics.academy/vaccines-a-victim-of-their-own-success/> [<https://perma.cc/27YW-FN4Q>].

285 Fortuna, *supra* note 284.

286 *See* OFFIT, *supra* note 155, at 154-59 (recounting the progressive changes in U.S. tort law that allowed vaccine manufacturers to be held strictly liable for the individual injuries their vaccines caused).

Those revived memories, in turn, should make decisionmakers pause to consider long and hard whether individual rights should be able to undermine broader public health goals. There was a time, after all, when eight-year-old children cried when they got their sneakers wet in the course of a summertime romp along a stream, fearing that polio would strike.<sup>287</sup> Living without that fear is a luxury—but a luxury, at least for diseases other than polio, that we can continue to enjoy only by resisting the vaccination regulatory shifting baseline syndrome.

## V. CONCLUSION

Protecting ourselves from ourselves and squarely addressing commons abuse are two of the trickiest goals of public law because the resulting regulatory regimes tend to privilege the general public welfare over individual liberty—the communitarian perspective. When such a regulatory regime succeeds, generational amnesia can, perversely, obscure its general welfare benefits, allowing relevant interest groups and decisionmakers to question why the regime was necessary in the first place or the fact that the regime is still working to protect the public. If this cultural amnesia leads to a conclusion by the relevant decisionmakers—such as the Supreme Court majority in *Shelby County*—that the problem is no longer a problem, the regulatory shifting baseline syndrome has taken hold, and history will likely repeat itself. This Article has focused on how the success of vaccination requirements has allowed individuals to forget how harmful the dread diseases actually were, contributing to vaccination resistance in the United States. However, the regulatory shifting baseline syndrome may also help to explain recurring problems in other arenas, such as decisions to deregulate businesses and financial institutions that lead to economic downturns and crashes.

If one accepts that the shifting baseline syndrome is a real phenomenon with real consequences that generally impoverish society as a whole, the question then becomes how to prevent, or at least correct for, its emergence. The loss of intergeneration memory about historical ecological conditions—“environmental generational amnesia”<sup>288</sup>—may require active reconstruction of cultural memory through new sources of data and creative extrapolation. For the regulatory shifting baseline syndrome, however, the cultural memory is *right there*—embodied in the very regulatory regime whose success allows the syndrome to emerge.

More information, in other words, is unlikely to be a necessary or effective corrective to the regulatory shifting baseline syndrome. Instead, the various

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287 MEREDITH WADMAN, *THE VACCINE RACE: SCIENCE, POLITICS, AND THE HUMAN COSTS OF DEFEATING DISEASE* 13 (2017).

288 Kahn, *supra* note 26, at 93-94.

regulatory decisionmakers—members of legislatures, agency personnel, presidents and governors, and judges—need institutional prods to remind them to remember and value the cultural memory they retrieve. For example, in agencies and perhaps some legislatures, procedural public participation requirements could help ensure that those who benefit from the regulatory regime’s continued existence have at least the opportunity to speak on its behalf. In the courts, a revived and strengthened purposivist approach to statutory interpretation that considers not only the legislature’s goals but the social context of a statutory regime would be a helpful prod.<sup>289</sup> For constitutional and other reasons, these institutional prods will often need to function as norms rather than as requirements. Nevertheless, institutional norms, once developed, can still be powerful. As one example, when FDR broke the two-term presidential norm that George Washington established, the result was a constitutional amendment to ensure that no President ever did it again.<sup>290</sup>

The first step in correcting the regulatory shifting baseline syndrome is deceptively simple: A broad swath of society must identify regulatory regimes as memory institutions. When interest groups or even a large percentage of the population challenge a longstanding public regulatory regime as outdated and obstructionist, the first response should become: “Why does it exist in the first place? What problem might we resurrect if this regime goes away?”

Again, the point is *not* that longstanding public regulatory regimes cannot outlive their usefulness; they most certainly can. The point, rather, is that legislatures and agencies created them for a reason—a reason that was worth the effort and expense of putting the new regime into place. Particularly when the industries and interest groups that propose dismantling the regime argue in favor of the *private* benefits that will result—such as, in the case of vaccines, greater individual freedom and autonomy—a high threshold of skepticism and a presumption in favor of continuing to protect the general public welfare is warranted.

The second step is to reconstitute the *full* risk-benefit balancing at issue. At the very least, regulatory gatekeepers should understand the full range of societal problems at stake before attempting to re-evaluate the regulatory regime for contemporary circumstances. The temptation in light of immediate political pressure is to discount the vanquished regulatory problem as irrelevant—to shift the regulatory baseline. Therefore, to ensure that this impulse does not allow the regulatory shifting baseline syndrome to emerge, legislatures and courts should

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289 See, e.g., John David Ohlendorf, *Purposivism Outside Statutory Interpretation*, 21 TEX. REV. L. & POL. 235, 237-38 (2016) (describing purposivism and its competing school of textualism).

290 U.S. CONST., amend. XXII.

assess the extent to which the public is still benefitting from the regulatory regime—even if the problem itself has not been seen for decades. In the case of vaccine-preventable diseases, for example, they should ask: will infectious diseases return to the United States if we stop vaccinating and allow herd immunity to lapse? With the exception of completely or geographically eradicated diseases like smallpox and polio, all available evidence says *yes*. Vaccination mandates—and especially the children they protect—should not fall prey to generational amnesia.